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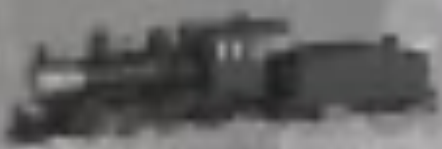

MODELING from the PROTOTYPE

[illegible] Journal • Volume [illegible], No. [illegible] • May 2008

ON THE COVER

Mike Dwight is operating a scene of the Chesapeake and Ohio's Clifton Forge Division behind C&O Pacific and Challenger engines circa 1950 on the main deck of a 48-foot layout. A westbound empty hopper train is in emergency at Dwight, Virginia on the James River subdivision. The author suggests that the emergency application of the brakes was simply an unforeseen accident on the part of the engineman who chose to stop and grab a sandwich and a cold soda at Mitchell's store across the way. Our "Layout Tour" begins on page 27. —Robert Schleicher photo

IN THIS ISSUE:

- [illegible] page 4
- [illegible] page 54
- [illegible] page 22
- [illegible]

[illegible]

[illegible]

3 [illegible] on the James River Subdivision on August 23, 1950. by Mike Dwight

[illegible]

4 Inventorying the Union Pacific "City" trains at Cheyenne, Wyoming in the fall of 1957. by J.E. Rosenberger

[illegible]

[illegible]

5 Inventorying the Union Pacific "City" trains at Cheyenne, Wyoming in the fall of 1957. by J.E. Rosenberger

Layout Tours

14 [illegible]

27 [illegible]

40 [illegible]

54 [illegible]

[illegible]

22 [illegible]

[illegible]

44 [illegible]

[illegible]

48 [illegible]

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56 [illegible]

[illegible]

[illegible]

58 [illegible]

[illegible]

[illegible]

60 [illegible]

[illegible]

62 [illegible]

64 [illegible]

Nicknames for the fellas

Wheezy. Big Wheezy and I did not realize we'd hired all our model railroading friends when we started working at Model Railroader. So when it's time to [illegible]

Throughout the spring, the staff has been finishing up work on our new publication, Model Railroader Annual—the help of many friends. The layout will be featured in Model Railroader this winter, as for many of our subscribers.

Our friends aren't human. They're [illegible] that the staff has entertained.

We named these trains to distinguish them from similar trains at the end, we hoisted and don't have names yet and we're called something.

We rely on the staff and decisions that not on their desires should be crafted such and such. The outcomes can happen.

In a practical sense, the names help with staff communications: what's the staff working together on model railroad [illegible] like a model railroad club.

For the record, here are the background stories on our nicknames.

Wheezy is a small shop vacuum that uses a rechargeable battery for power. It was under the [illegible] "Wheezy Kramer" which brought a new shop. It's a few years ago. We have all since stopped by keeping Wheezy's battery charged. Our small handheld vacuum tends to [illegible] before the time you're [illegible] completely. It wheezes.

Big Wheezy is the new, plug-in vacuum. It doesn't wheeze, but it's bigger. We could have called Big Wheezy the "clean machine," but it's Milwaukee, so a shop vacuum, too. While working on our project layout, the staff found a need to distinguish between the two [illegible] since one has a small [illegible] tank.

Old Milwaukee is an older, steel plastic-shaped vacuum we inherited. It's normally stored by Milwaukee Tool and looks like a big beer can.

The 5.5-liter [illegible] is a rolling workbench/tool for the two Goody Hobgood crew at Model Railroader's nationwide studios. It was built as a mini-retail storage space now right in our workshop and we had to make things oversized to accommodate photographs.

It's got a 21-x-3 foot flat work surface on one side of the workbench and eight heavy-duty drawers and a work cabinet on both front and power ends. The cabinets and five pegboard backs to hold our power tools, clamps and hardware.

An extra-tall one-drill press, a workbench vise, drill press, a bench vise, and a small [illegible] garden are bolted to the top of the work surface. With its heavy-duty casters and drawers packed with tools, it easily weighs 1,000 pounds.

Soon after it was built, the drawers numbered 6 and [illegible] discovered at the 5.5 Hobgood. Twenty years later, the name, with an exaggerated pronunciation, [illegible]

I can't say it when model railroaders nicknames stick, but at other times I suspect even the [illegible] were born at play. If one has got an amusing name for a workshop tool, drop us an e-mail to mrmag@kalmbach.com

Mike Schafer, Managing Editor

Contributing to Model Railroader

We welcome contributions from our readers, including articles, photographs, and prototype drawings. For detailed information on submitting material to MR, contact our editorial assistant Erin Dieterling at 262-796-8776, ext. 103, or mrmag@kalmbach.com. Model Railroader assumes no responsibility for the safe return of unsolicited material. All accepted unsolicited material is considered for publication by Kalmbach Publishing Co. unless otherwise noted. We reserve letters, questions, news releases, and club news items are considered [illegible]

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WALTHERS

News&Products

Holiday steam. On holiday shop shelves now is this six-pole road diesel from Athearn. The model is offered in eight road names, including this Denver & Rio Grande Western scheme; more are on the way, as well as ID240-2 and ID497-2 variations. The direct-current model is equipped with a Digital Command Control Quick Plug and Multifunction Industries couplers. Most versions are priced at $69.98; the Southern Pacific model, equipped with elephant ears, is $109.98.

Second U.S.-prototype model railroad convention in Germany. The Model Railroad Organization of Hannover is planning to hold an all-steel convention for European modelers of heavily historic, themed railroads. The event will be larger than last year's and is aiming to draw crews. The Mississippi Locomotive Works is a fictitious railroad based on Model Railroad Engineer, Model Railroader, and Prototype Modeler issues from the 40s, 50s, and 2. Guides, as well as modelers, members' issues, and workshops, is in demand for Sept. 10–24, 2009. For information, go to the convention's Web site at railroad.de.

Rapido Trains to offer On-Board sound recommixer. Canadian model manufacturer Rapido Trains is expanding into microelectronics. The first entry in the "Rail World Locomotive Line" will be an Electro-Motive Division (EMD) diesel decoder for several Canadian prototypes. Rapido says that its sound will include details specific to these Canadian locos. Several equipped models will include sound recorded from Canadian prototypes, as well. The 900-scale models will have four-pole skew wound can motors, prototype-specific details, and Weathered Carbon stainless finishes available. Recommended models will sell for $349.95; others, with digital command control and sound, are priced at $249.95. The models are locomotives will be available in late 2009.

Bring on the locomotives. Aristo-Craft Trains' numbers available. Art's Working Steam Boy at Western Division (shown), with black and white; one numbers from Hannover Central edition, one modern Louisville & Nashville Maroon Black and gold; two modern gold and black & Nevada. These numbers extend Aristo-Craft's line even as some of its first steam locomotives are due for road tests. Inches-round and wire-details-detailed cab interiors with painted cast figures and brownie magnetic knuckle couplers. Other accessories include cabin with eight-pin Digital Command Control decoder system, $249.95; coaling tower, $49.95; and tender, $249.95; diesel edition, $279.95; August 2009. Aristo-Craft Trains, Inc., 3654 World Boulevard, L.L.

General Electric 70-ton diesel locomotive. Architects Road Line road number available. Lionville & Nashville two numbers and Northern Pacific two numbers. Also available unlettered for painted run-personnel. paint. Black.

Highlighted in this issue

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

Calendar

July 5–11, 2009 NMRA National Convention and Railroad Train Show. Connecticut Convention Center, Hartford, Conn. www.nmra2009.org

Aug. 4–8, 2009 National Association of S Gaugers National Convention. Sheraton St. Louis Airport, St. Louis, Mo. www.nasg.org

Sept. 10–13, 2009 National Narrow Gauge Convention. Wyndham Hotel, Colorado Springs, Colo. 2ftng.com

Oct. 23–25, 2009 Atlanta Expo. Cobb Galleria Convention Center, Kennesaw, Ga. www.trainexpo.com

or colors and style. Model runs round S-curve, directional lighting, and 3–4 days' work to assemble; bundle-run. Backdrop.

Electric Motive Division EY diesel locomotives. Kumata Kits. Available now; road numbers each for front A and B units. 3-rail only. Undecorated brass shell, $150; painted, $175; painted and lettered, $200. Add $10 for road numbers for front A and B units.

Northern Pacific passenger scheme with "Main Route of the North" slogan and Mark Hopkins. Five road numbers per A unit and three numbers per B unit; extra when one wears thick metal grille, prototype details, and Kadee magnetic knuckle couplers. Model runs on dual-rail style pre-depot Command control system. $440–$464.95 per B-unit; $495–$519.95 per A unit; $1,044.95 per B unit; $1,099.95 per A unit. Ready-to-run. Intermountain Railway Co.

HO scale freight cars

Wood coal gondola. Archives, Tracks of Years Ex Washington Northern, Pioneer Electric Power and Southampton Electric Power Co. Before car numbers each probably in more than packs plus one single car. Between-end load, metal structure, and brakewheel. Includes couplers. Single car $7.98. Accucraft, $19.95. Grandt Line Products, $19.95. Kadee Quality Hi-Rail. Adapter Group.

American Car & Foundry 4,700-cubic-inch-capacity plastic covered hopper. Atlantic Electric Rail Services (East Boston Service repaint colors and 4 to 6 lettering styles). Avery Chemicals, Dupont (Red and Pharma Co. (ADM) lettering styles). Phillips Petroleum, Phillips Union Tank Car, and Nicholas Petroleum. Two car numbers within small, also available undecorated. Includes metal running boards, brakewheel, metal wheelsets, and Accumate magnetic Kadee couplers. $12.49 (undecorated, $10.99). Ready-to-run. Bluford Shops. Atlas Model Railroad Co.

Union Pacific American Car & Foundry two-bay Center Flow covered hopper. 4,713 cubic-inch capacity for Chicago & North Western ("the NW5 Railroad" slogan). Western & Atlantic Railroad, Wisconsin Central, Chicago & North Western ("the NW Railroad" slogan), Soo Line, and Southern Pacific. Three numbers each where noted. Metal wheelsets and Kadee magnetic knuckle couplers. $19.95. Ready-to-run. Intermountain Railway Co.

N scale two-sided outdoor billboard. $5.95. Hollow-ring plaster and stamped metal billboard kit installs on 1.000" or taller, grid post offer 4 or HO scale as well. The factory-assembled model comes with 10 included applied signs, and 10 more are available for free download at kitmasterstudio.com. The N scale billboard sells for $10.95; the HO model sold as available in late 2009 for $14.95.

Baltimore & Ohio M-350 40-foot boxcar. Custom-decorated Red Caboose model. "Time Saver Service" paint scheme. Eight road numbers. Three-panel Youngstown doors, prototype-accurate paint, plastic, and Accurail trucks. Coupled on one road number, $24.95. Ready-to-run. Kansas City Design.

Four-bay depressed-center flatcar. Scratch-built Lego, Multi-Wheeling Equipment (TTX) Inc., Trailer Train, and Transamerica Railcar Corp. Molded-applied side brakerods, 33" (1-meter) metal wheelsets, and Protocraft metal magnetic knuckle couplers. Single cars, $34.98 (two-pack, $69.98). Ready-to-run. Rite-Q. Modelers Die

Saskatchewan Grain Car Corp. commercial exposed logger. The car is upon entering negotiations a unique prototype, North American Railcar Corp. offers these HO and N scale models in on most numbers, plus five DSH car. Like the prototype, this car bears a slogan and silver lettering recognizing SGCC, North American Railcar, and hailing manufacturers Kadee and Micro Trains. The DSH car is available only with the purchase of 12 other SGCC hoppers from the makers a Web site, pano.ca. The cars feature etched-brass running boards and magnetic knuckle couplers. They cost $36.95 in HO scale and $26.95 for N scale.

HO scale passenger cars

Southern Pacific Daylight passenger cars. Scratch-and-dent-resistant material, metal wheelsets, and magnetic knuckle couplers. Most cars include interior detail. Two cars are numbered. Also available separately are baggage, coach, and dining cars. Eight-car set includes baggage, coach, diner, observation, and sleeper cars. Each car sold separately. Prices vary. Available now. Kato USA, Inc.

New York Central 20th Century Limited passenger cars. Prototype-accurate interiors and underbody detail. Prototype-accurate trucks, lighting, and glazing. Factory-installed electrical contacts for interior lighting. Nine-car set includes baggage, coach, diner, observation, and sleeper cars. Each car sold separately. Prices vary. Available now. Walthers, Inc.

Assorted commuter car kits. Scratch-and-dent-resistant plastic. Metal wheelsets. Each car includes trucks and details. Sold for single cars. Sold for assorted and themed sets. Prices vary. Available now. Bachmann Industries, Inc.

Assorted passenger cars. Scratch-and-dent-resistant plastic. Metal wheelsets. Assorted and themed sets. Prices vary. Available now. Bachmann Industries, Inc.

HO scale structures

Rustic Building Facades. Laser-cut basswood facade. Seven cut sheets per kit. Detailed brick or stone and doors and arched window glazing. Can be used to detail a structure or as stand-alone backdrops. Prices vary. Available now. Model Expressions.

Southern Pacific Articulated Cantilever Depot. Wood kit includes laser-cut walls, deck, trusses, doors, details, and shingles. Instructions. Kit lists and dimensions included. 11" x 11" footprint. Available now. Model Expressions.

HO scale details and accessories

Tru-Metal die-cast metal magnetic knuckle couplers. Knuckle or long shank (long shank available in low pack only). Two-car pack (four pieces). $7.49. Four-pack, $11.99. 10-pack, $23.99. 24-pack, $59.99. Tru-Metal Products.

Die-cast metal construction vehicles. Nine 1:50 scale metal trucks and 8 figures. Posable figures with moving arms, elevated cab windows, and rolling metal tires. Models. $29.99. Tracking model. $39.99. Made in Malaysia, available from Schylger Distributors Inc.

N scale accessories

Electric Motive Division EDA diesel locomotive. Adjusts 3 axis (yaw, horizontal, & tilt) manual 4-360° journey, forward & reverse, headlight & marker lights, and trim kit. Four road numbers available. Three variations, which each also available unlettered with light or low-level directional lighting, prototype-specific details and accessories, snapping knuckle couplers. Prices vary. Available now. Kato USA, Inc.

N scale freight cars

80-foot auto-parts boxcars. Double-door car includes detailed

Milk wagon decorates seasonal hoppers. Available now from Con-Cor in HO two-bay ventilated covered hoppers. Designed to carry materials like sugar, flour, or cement, the hoppers come painted for 10 rapid and private owners. The cars have NP-10 molded (thickened) metal wheelsets and magnetic knuckle couplers. They sell for $22.98 each, or in sets (cars) for $68.94.

Grand Trunk Western covered hopper (series), Norfolk Southern single car seller, Central New York covered hopper, North Pacific (N. Lines Northwestern) covered hopper, single car seller, and Southern Pacific single car seller. Painted metal details, separate knuckle couplers, and radius drop post mechanism. Single car, $24.95; complete set, $99.95. Walthers Mainline.

Ready-To-Refrigerate Dept. 4242 reefers. Class RA-5 (no ribbon), RA-7 (ribbon), RA-8 (ribbon), RA-9 (ribbon), RA-10 (ribbon), and RA-11 (ribbon) Grand Canyon Line reefer. Kit has cast stainless steel, Micro-Trains couplers, and separate knuckle couplers. $21.95. Kadee Quality Products Co.

T-style passenger cars. Pullman 4-double bedroom, 4-compartment, 2-drawing room observation cars. Canadian National, Chicago & North Western, New York Central, Pennsylvania RR, and Union Pacific (reverse Yellow

THE MODEL OF THE MONTH!

WALTHERS

HO scale Blue Mountain Railroad Baldwin with working smoke. In holiday shops now is this Digital Command Control-equipped model of a class J7a 4-8-4. The locomotive is the first from Broadway Limited Imports' Paragon 2 line to be upgraded with a DCC-controllable, sound-synchronized smoke unit. The motor also has a five-pole skew-wound can motor, die-cast metal-magnetic knuckle couplers, and dual-mode sound. The locomotive sells for $449.99.

on Cleveland Union Terminal. Runs on seven cars, features detail work lighting, wire grab irons, and Many Trains tracks and magnetic knuckle couplers. $299.95. South Carolina Semi-Monocoque Railway Co.

Arched roof baggage-express car. Canadian National ("Ben Nevada" scheme) Milwaukee Locks scheme & Minneapolis & Omaha ("Route of the Pacific Coast") Union Pacific Northern Brick Lifeboat Southern Pa. Southern Pacific (daylight scheme) de Luxe Rye Overland Pullman Union Pacific stock also with wood roof boards and Western Pacific. Multiple numbers available. Sliding doors and Micro-Trains magnetic knuckle couplers. Reserve before July 1. Price to be announced. Wheels of Time

S scale details and accessories

Diesel sanding trains. For the scale. Plastic commercial and skylight and ladder and railing. Factory assembled and painted $29.95. Accessories Limited Models

Transit motor coach. Series 4 and Fort Broadway (New York City), Chicago Transit Authority, Los Angeles Transit Lines, Metropolitan Bay Transportation Authority & Suburban, Montreal Transportation Commission, Seattle Transit System, and St. Louis Public Service Co. Rolling steel tires, detailed interior, and changeable box numbers. $27.95. Wheels of Time.

Spine car detail set. For Athearn box cars set 32' & Rivet Kits. Etched brass sheet includes tread plate and steel rivet detail overlays for all box cars to get 1:24 Ft. $8.25 Scale Models

O scale freight cars

Frame fit-free double-plug door boxcar. Mint, paint schemes. Tidelle, Pennsy & Western. Two Rivets Milling inverted caboose footwear for and Minnesota & Southern (Great Northern) 75th anniversary commemorative scheme, with Fallen Leaves Canada scheme, or Sargent Cheese billboards. Over car number sets, circa 1930 and 70s, plus available undecorated. Running the cast metal trucks with scale wheels, separate applied details and scale couplers. Kadee couplers. $44.95. Detroit Lubricator. Wheels of Time

4-inch polyvinyl fulcrum with rope. Two car numbers. Weather Proof Door Company of Rockville Minnesota & Western and Lost Wheels of Ohio box car numbers sets. Two paint schemes. Brass & Iron Horse Door car numbers available. Also available unpainted. Rubber polyvinyl hook and Lady magnetic knuckle couplers. $39.95. Angelus Model services. Wheels of

O scale structures

Backyard Pond water tank. Bridgeton & Saint Louis 4-8 steam type. Steam-use wood kit includes articulated construction, rivet detail, metal jig, and pick-and-stick axles. 1:1 x 4 in. prototype. $42.95. Adventure Model Builders Inc.

O scale details and accessories

24 type searchlight signal. Brass construction. Illuminated to make light-emitting diodes and detailed cabinet with opening door. $49.95. N.J. International Inc.

I scale locomotives

Electric Motive Division GP38 diesel locomotives. Baltimore, Virginia & Santa Fe and Southern Pacific Depot for "Bicentennial" paint scheme schemes. Magnetic knuckle couplers. $39.95. Angelo Brass Model Frame Line Co.

I scale freight cars

Assorted freight cars. Various numbers Model Depot Grill cars Southwestern Oklahoma 4-8 straight car and mini-mail gondola available. $36.95. Pullman Standard 40-foot double door Delaware, New York, New Haven & Hartford 286 Canton orange with logo lettered, cars available. $29.95 Magnetic knuckle couplers. Kadee Brass Model Frame Line Co.

T scale structures

Wood grain wooden. Laser-cut wood kit. Mail and work wood plywood doors, windows, and trim. $49.95. Micro-Trains Line Co.

I scale details and accessories

Diesels are logging camp processors. Fabricated cast plastic with coatings loads for rapid prototyping system. Metal, decals, $29 calendar was with log loader. $39 set. $49. Scenery

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Out of the box

50-foot boxcar (pictured). [redacted] scale, licensed kits, products. Announced for Kitchener Model Railroad Club's 50th anniversary. Black or yellow. Decorated, complete and numbered models. $39 each. $35 for two. Includes only one package. To order: Kitchener Model RR Club, care Don Wolfe, 164 Francis Ave., Kitchener, ON N2M 3K. Information: www.org

Great Northern Electric Railroad Pure environment Railroad Park environment Award. The environment railroad model for O, HO and N scales. Features the "Rocky" Mountain 2-6-4 at $ 199.99 each, plus $5 shipping per order. Send orders to Great Northern Electric Railroad Service, 8765 Main, Minneapolis, MN 55437, or order online at www.gnerr.org

Multiple-scale details and accessories

Kitchen-brass car sides for the Northern Pacific Railway Lounge parlor-car lounge car. [redacted] in HO and N scales. Offers scale cars developed on the work from Custom Railway Products Inc. NPC Publication

Assembled Accessories Car & Foundry passenger cars now for in with Brass Car Sides from trade kits on. HO, N scale cards are designed in the world with the American Colored Wheels in. #000 in in. #000 cars kits. HO scale $12.75, N scale $13.75. Brass Car Sides

Electronics and controls

Brilliance sound decoder for HO scale steam locomotives. Produces true synchronized chuff sounds, 28 whistles, and more bells. 28 operations functions, 1.5 amp capacity, and smoothed speaker. $49.98. Model Railroad Times

Scenery

Railroad Plain backdrop build sign. Digitally photographed building sets. Reference Series for 1, 2, 3, 4 and 10 HO scale structures. N scale 10's Willie Peak no. 1 standard all town HO scale $20. N scale $18 Kingfield Enterprises

Tools

HO scale wheel chisels. [redacted] Quality tools from HO scale wheels are for scenery. Specific chisels for 33" or 36" wheels. $29.95. American Model Builders Inc.

Manufacturer listings

[redacted]

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BY BOB JOHNSTON

Fast trains get highway help

New grade crossing devices on Amtrak's Michigan line could improve safety on fast rail corridors

Amtrak has the industry's most-used crossing safety: 1. What a train approaches, crossing signals activate. 2. When train shadow is gone, height is okay. And system checking traffic lanes now eight seconds after lane shadow cars up. 3. Flashers and gates block the crossing.

Tucked in an impatient driver's mind—one more annoyed motorist grade crossing gate turns every people their and momentous should a train crash. Some locomotive engineers when the world moments be many as gas hope tractor. Passengers no forget can lose no train seriously goodbye. while police — and often a carpool contact — sort see the carnage. "You can't keep people from doing something stupid," the wrong goes. Any with passenger crews going down all the time, sooner you can try.

That's the logic behind a Michigan Department of Transportation highway crossing installation about halfway between Detroit and Chicago's Union Station. Amtrak trains there and freighters share the Jane Line, the Amtrak-owned Kalamazoo-Grand Rapids-Holland-Porter, Mich., line running on 79 daily trains a day. When the gates go down, motorists in the middle of the road see a black traffic screen and the railroad tracks. The screen as a safety cast on a car and motorists more driving around lowered gates. The idea was born when Ray Shahan, the state administrator of high-speed rail and passenger project infrastructure, saw a demonstration by Arizona manufacturer Intelligent Resistance Systems of Tucson, Ariz., at a highway show in 2009.

"We had developed the product for traffic applications, like shutting off electronics at redlighted buildings, where the state wants to do with a physical or not the concept train," explains company president Terry Shannon. He and co-worker Mike Arendt brought in digital sensors, programmers to demonstrate the system for Shahan one month after the installation had been up to speed on a six-month evaluation. They were joined by two Michigan locations signal maintainers Joel Mike Roberts, the state rail oversight manager in charge of the project. In Shannon spoke, a consultant provided by spreading salt over the 80 stainless steel plates on the road bed protect the luminant polycarbonate lens cover.

All three were last there two years before. The crossings development began with a $177,000 federal Railroad Administration safety grant in 2007 that was also funds funded for the state. Crews dug trenches across the middle and cross tracks ahead to hold the wiring, control boxes, cameras, and lane sensors. Some recent work this grade crossing sited for the Jane Road. Thursday, Wayne County and track owner for every all operations at the state industries. No commuter trains have cause of multiple workers to use through, permanent lane shutters turned on either location of a train, and that runs parallel to the tracks and adjacent to the crossing, and passenger trains still pass at high track speeds with closed gates at

>> Retro colors for Amtrak's 40th anniversary

Amtrak P42 No. 169 is the first of four P42 locomotives that will wear the special anniversary livery. Amtrak paint schemes as part of a yearlong series of events to commemorate the railroad's May 1, 1971, beginnings. No. 169, debuting as new built at Chicago Jan. 30, wears the Phase III scheme introduced in 1976. Other events include the launch of an exhibit train on National Day Train, May 7, 2011, that will visit about 30 museums and telephone centers over the ensuing year, run by restored P42DC and E60 locomotives, the special will consist of a retro sleeper, three coach baggage cars, and a cafe car selling retail items, including antique-related products by Mattel, the book "Amtrak: An American Story," and a video documentary. The train's itinerary had yet to be finalized at press time, but Amtrak will be posted on special 40th anniversary and National Train Day websites. Amtrak more trains. Trains.com for future.

A Northeast Wisconsin No. 250 slams across Scenic Road near Valders, Wis., at 11:09 a.m. Jan. 7, 2013, one month after the new devices were activated. Jeff Wetherby/Trains Magazine

State funding and a FRA safety grant helped jump-start the crossing test project. Video cameras at the scene are documenting driver behavior.

Flyhe enters-exam replaced to make the 36-inch dividers the Valder

Trains at Speed

Trains and Images of a Classic Railway

John Kelly

Adventures in code 55 track

Code 55 track, seen here on Jim Kelly's Tehachapi Loop layout, has raised the bar for N-scale realism – but it's not been without challenges. JIM KELLY photo

I'm using Kadee's #58 and #148 (above) flanking the Tehachapi Loop on I call it Willow Knoll. It's used Peco code 55 track on Tehachapi XL, and that's very much as I was planning to use it again. That I was Atlas's new code 55 flextrack and new switches.

The Atlas flex was considerably smaller than Peco's small-spaced sleeper, making the Atlas track more realistic. Peco's track was well made, sturdy and reliable, but since I was mentally starting over, I decided to switch. I'm happy I did, but I've seen a couple of challenges I've shared in my shoes. (I'm sure don't already.

Bumps in the road. Peco's Atlas code 55 was introduced, wouldn't discovered that Micro Trains cars made a fairly reliable rock around as they rolled along because the flanges were hanging on the inside rather than. This wouldn't have been such a big deal with other brands, but those were Micro Trains cars, around among most N cutters as leaders to wallow.

This compatibility problem was compounded by the fact that Micro Trains' trucks were also well-engineered, and many N-scale users flock to replace the trucks that came with easy other brands of rolling stock. Micro Trains trucks were extremely free rolling, and I've bought the trucks that came with my cars, assuming not much was to ever way to convert equipment to the premier Micro Trains couplers.

The huge energy to call Micro Trains' wheels "pizza cutters" because of their large flanges. Whatever with standard wheel profiles, which gentle could replace them with smaller flanged wheels. Replacement candidates included Micro Trains' new low-profile wheels.

My favorite combination has become Atlas metal wheelsets in Micro Trains trucks. I prefer them to plastic wheels because of their deep shade. Also, the combination rolls very well. Here's a shot Micro Trains truck.

In the meantime, Micro Trains' statement releasing cars with the large flanges, but also began including a set of its low profile wheels for those who wanted to switch. The company is no longer doing that, and instead has introduced a new wheel that has been dropped. The last two Micro Trains cars I bought have these, and they look and run great on Atlas code 55 track. But enough about wheels for now.

The bigger problem. I was fortunate that my locomotives were shopping on the Atlas code 55 turnouts, and all the flying and trembling I did on the points days, and not even didn't help. I recall that I was tempted to scrap trying to solve the derailment problem. It was heartbreaking to watch a beautiful train (Kato SD40-2 roll smoothly over a crossover and then bog down on its side.

Finally, the lightbulb went on and I switched on. If the turnouts don't mix with my Kadee/Micro Trains couplers, I'll change the turnouts. Now, I've gone through them and they have the problem to with my locomotives.

And that's exactly what it turned out to be. The Kadee wheel spacing on my locomotives was too tight – not by much, only about the thickness of a business card – but that was enough to cause all kinds of problems.

I'm here correcting this by sharpening the tracks and setting the back-to-back wheel spacing to .340" (the NMRA standard). Which seem a few days for and will fine derailments.

I measure this distance with a caliper. While a no inexpensive plastic one made by Central Tools. A tool you should to have, too, you know. Usually I use below the dimension by creating with my fingers, but if that gives problems, I use a gear pullers. The Kadee gears a do something the tracks. I've been needed one, and so go the axle frames apart to. Mr. me my assembly. I'm reliably way'll find a bit of way and that. Use he always gauge tools a small screwdriver.

This has been an engineering feat here. I will have many locomotives to go, but I'm gonna have it to and it goes never operate more. I have it down to about 30 minutes per car.

My final word is that even at the chapters I've brought accurately haven't had the problem, which means the modifications were fairly straightforward and correcting. I was hope so.

Jim Kelly is Model Railroader's [illegible] managing editor. His N-scale collection will appear in a future issue.

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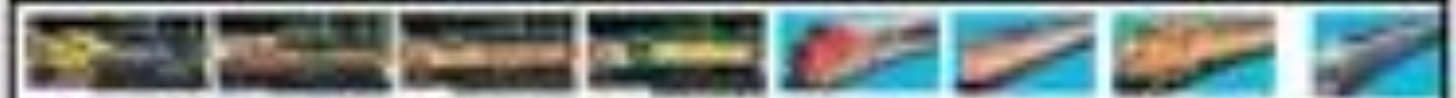

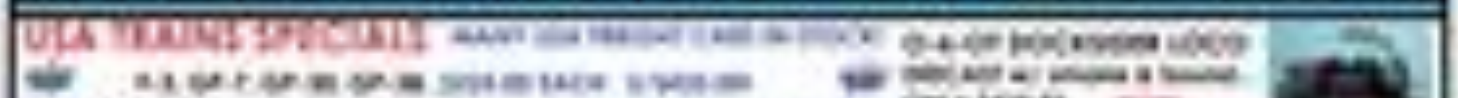

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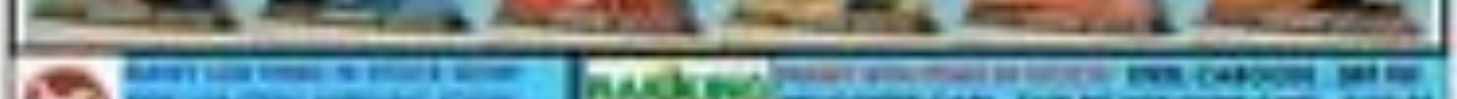

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Tracklaying tricks with curved turnouts

Three Peco curved turnouts (left) helped senior editor Jim Hodges fit into crowded loop-staging yard on his HO-scale Ohio Southern. The switch machines are top-mounted for clearance underneath and easier maintenance.

The smooth flowing lines of a gently curved switch lead provide some of the most realistic looking trackwork out to study in detail as the bullet train zooms overhead. The curved turnouts are the only option for modelers who wished to capture this appearance. But in recent years, most manufacturers have responded to the demand for ready-to-use curved turnouts.

Curved turnouts are special switches used on one route that occurs in the same direction. Diverging railroads have their turnouts lead to the join the two lines where a regular tangent track would. Most of these turnouts are available in sets for final assembly at the site.

Variations have a curve limited only by the curved radiuses, but very few used on a two-foot route, but it had more over the route. I'm no more 24" scale I that handsome. I've used them to help navigate trains into my staging yards, lengthen passing tracks, provide crossovers on curves, assemble the sharp into the fuel tracks to yard ladders, and fit redundant space over right locations.

The reverse loop staging yard that represents my upper deck Kingston & Main customers, shown above, is the first location where I used a group of Peco curved turnouts. The entry side of the yard is straight, so I used three right hand medium radius turnouts in a row. It terminates at point the first tracks.

In the staging tracks long smooth flow returns to the final track at about a 45 degree angle that I be was about the several turnouts I wound up using a regular switch left at the same time with the straight main track and then added three 10-, 18" Curve 249 I terminal double radius left hand turnouts to thread the staging tracks into the turn-around.

Other possible applications for curved turnout are shown on the the green (upper right). The wye with large radii closer to handy to long-term passing tracks for placing there is no end curve well before the track straightens out.

I used at point, curved turnout can be combined in cross crossover to double-tracked curves. I've had excellent results with a long curved crossover leading into one leaves and from the north. It provides access to the tracks and the engine and passage for through trains. I used Walthers on 4 curved turnouts in this location, and they've been going on seven (two) 10 years of service.

The end of a yard ladder is another place where a standard and curved turnout can coexist the rubra who the but part of tracks. Where I used all straight turnouts at my ladders I always passed up with a bold, sharp curve (when the bar track was fixed or on parallel with the axe of the yard. Now I use a third shorter curved turnout at this location, so the curves into the two tracks are wider and operate better.

Finally, I've also used an occasional curved turnout to use an ordinary track into the inside of a coachful curve. I've always liked the looks of a track curving along the outside of an open building.

Careful alignment pays off. As I began installing my first curved turnouts, I realized that good alignment was going to be critical to perform large locomotives and heavy cloths allowed.

As I noted any curved turnouts, I do a lot of testing there and lighting along the side to make sure the curve contours smoothly and there aren't any kinks at the rail joints. To install a crossover, I cut or the outside turnouts first and then the rail trainers in place to hold it. I overlaid the inside rail and made sure it aligned through the crossover before I cut it over the inside curve. Then I made any minor adjustments needed to align the outer curves.

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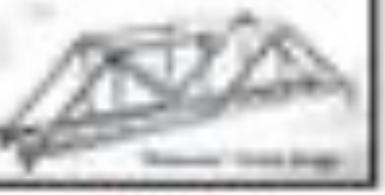

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WORKSHOPTIPS

For the record that the biggest hi-wire (not visible in detail) and no noticeably find are imperfections on the main current rails, especially at crags and joints. I also carefully dampen the current wrench points with a file to get a smooth connection before overhaul. I test any certain points by driving a short-haul along the inside of the rail heads to find any rough spots.

Additional track alignment gauges also come in handy to ensure that all of the rails curve uniformly through the turnouts and the approach tracks. Then I solder the rail ends within the turnouts later to ensure everything before final splicing. – *Jim Hodges, Lewis Center*

HO and N curved turnouts

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- **Peco - N scale**
Code 55 medium radius double curved left and right turnouts. Code 55 double curved left and right turnouts (Electrofrog or Insulfrog). www.peco-uk.com
- **Walthers - HO scale**
Code 83 double curved turnouts no. 90, no. 8, no. 7½, and no. 6 left and right. www.walthers.com

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A Landmark Model of a Landmark Engine

The 4-8-8-4 Big Boy was one of the finest American steam locomotives of the early 20th century, vaunted as they were with immense mass and pulling power. Athearn captures the spirit of the storied Big Boy in its new N scale replica, which has been designed to represent the model train industry's highest standards. The Athearn 4-8-8-4 Big Boy comes fully assembled with exceptional ride-up detail to hit your N plan. It also includes a factory-installed DCC soundboard with a tender-mounted speaker that channels whistles, bells and other authentic sounds in both DC and DCC modes.

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HO/N/Spirit

Why good turbochargers go bad

The mechanics of high-horsepower diesel oil's most common failure

Canadian Pacific AC4400CW No. 9600's turbocharger gets hands at the head of a Saginaw, Mich., to Minneapolis trip in December 2008.

Turbocharging has been around almost as long as the diesel engine. Even early-day locos, mainly Electro-Motive, used turbo-supercharged engines with the key driver that the economy of fuelless combustion the exhaust drives from the start. Today's turbocharged prime mover is the norm.

A turbocharged engine uses the energy from its exhaust to force more air into each combustion cylinder so that can burn more power instead of pumping that hot exhaust directly into the atmosphere. An economic waste, as it is to drive more horsepower from the same engine.

Think of a turbocharger as two basic units that connected together via the same shaft. Into exhaust the engine passes. Engine exhaust is routed through one of the two and it causes the shaft to spin upside (more than 70,000 rpm, in the case of a GE, for the 4,000-hp diesel locomotive). The other half is the spinning of the same piece but this time it is used to drive more air into the engine's intake system. The fast rotation forces fresh air into the engine's cylinders. Then pressurized air can be fed to ensure even more fuel, producing a bigger bang in each cylinder and more horsepower.

This sounds great. Loco with its share of technical challenges, however. One of the issues that could be dealt with in the 1960s and compromises most of the trouble on on a mode of compromising it at the intake side of the turbo. Intake air is high temperature provides more combustion efficiency. Even only aftercoolers air compressed during passage of the turbo system to provide "air conditioning" so the cylinders get air that is cooler and more potent.

Turbochargers depend on exhaust gas flow to extract a particular flow rate. And a turbocharger on an EMD engine with an offset turbine (EMD turbo have a common one to the prime mover guarantee to provide boost when exhaust energy is low. This is also to have a supercharger operation. The EMD turbos also have a clutch which couples the turbo to spin faster considering the engine, growing when it hasn't been run on high enough.

A great deal of attention keeps a turbo operating properly, as well as good engine maintenance. If an EMD engine has a dirty airbox, oil and deposits can ignite, causing an uncontrolled combustion that can lead to an overspeed failure of a turbo. Also foreign debris that goes into the engine on the current of a turbocharger, as the pistons blades are vulnerable to severe punishment.

Worse, particulates (and dust) resulting damage can come from several sources. One can include ingestion of broken engine lining through the engine. With a worn airbox, dust can get what mechanics call "excessive piston ring side." Example (like, and it was one) air breathing compression rings. Some engines have a pressure-sensor switch, but small cracks of debris can still damage or slip through.

Ultimately, the foreign matter will end in turbine blades, where they start a crack. Over time, the blade can get loosen off, leaving the turbo out of balance. That can lead to bearing failure, and it can also cause the turbo to rub and to spin apart and overheat. The small blades that are leaving parts during can be seen, EMDs, some mechanics engineers say, tend to have this problem more often than General Electric diesels.

Turbocharger trips can also cause accidental fires, these indicate the engineers that also used flames alarming and the seals and bearing the cause of the locomotive overhaul.

On diesel, a GE or an EMD, with a bad exhaust problem such as bad or stuck injectors, or possibly a broken nozzle or an injector, the system loads up with unburned fuel. Ultimately that fuel ignites, causing the turbochargers to overspeed and fail. And will be that rushing off a locomotive display through the stack that can signal the trouble-at-hand.

Keeping on a regular basis, overhaul schedules is also important, or eventually all turbine and fuel valves due to bearings that have overheated from lack maintenance.

Minus one on this model

Union Pacific pushes SD40-based SD33 experiment into service

A pair of Union Pacific-owned SD40s, SD33MAC 33 No. 3999 and 3001, move a manifest from Canadian Pacific's Kenosville Yard at Franklin Park, Ill., on Dec. 14, 2015. The units lead an old CP-painted duplex at BNSF's London, Ont., depot.

Union Pacific is acting on a [illegible] SD40-based SD33 locomotives that Electro-Motive Diesel placed in its Canadian fleet, dump.

The rebuilt fleet designated the units originally constructed as 3,000-hp SD40s in the early 1980s, as SD33MACs. In 2002 it placed them in calendar 1st-group numbers with a 4-5 cylinder engine and Dash-rated maximum of 5,000 hp.

The rebuilds meet the Environmental Protection Agency's Tier 2 emissions standards, after having the EMD plant in London have been invested in UP's fleet's Little Rock, Ark., shop for painting and lettering.

Besides a new 12-cylinder engine, EMD's repowering program includes the engine car material for their remanufacturing, increased fuel economy and more productive emissions control. The builder estimates 21 percent fuel savings over the SD40.

If the rebuild is not under a successful UP is expected to retire other EMD/GE fleet in EMD-line rebuilding. The railroad has not at this model as an Iconic, excluding event event throughout the system due to the world increasing economy.

The UP SD40 fleet was among the biggest in the country and on a total of [illegible] both Railroads 1980s and 1990s.

Expected to be permanently based in Southwest California the 33-year-old power maintain successful lengths.

>> Another new home of the diesel locomotive?

Welcome Mexico, Ind., to the list of cities that are home to locomotive manufacturing. Progress Rail Services says its locomotive plant at a former ABB shop there will be branded Progress Rail Manufacturing Corp., open in late 2017, and has the capacity to make 150 units per year. The plant also positions Progress for potential transit contracts that include stipulations equipment must be made in America. For the Full Story, click here.

Trinity Railway Express F59PH No. 110 runs across Irving's Irving, Texas, shops in the evening.

Commuter engines get an upgrade

The Trinity Railway Express fleet of F59PHs has begun receiving its first Tier4-plus commuter agency following upgrades at shops in Iowa and Pennsylvania. The units, jointly owned by Dallas Area Rapid Transit and the Fort Worth Transportation Authority, are being overhauled to meet Environmental Protection Agency Tier 2 standards. The trains remain and fleet is receiving the upgrades. Amtrak Juniata in Altoona, Pa., shop and Wilmington, Del., shop are performing the work. NS completed Nos. 100, 103, and 105, while MILLER completed Nos. 103 and 108. The rest of the fleet will be completed this year. The F59PHs work in push-pull service with bilevel commuter cars between downtown Dallas and Fort Worth, Texas.

Iowa Interstate Railroad is to complete a new diesel shop on its service in Watershed, Iowa, by the end of 2016. Peak employment will be 45, and the shop will house five locomotives at a time. It'll include a wash rack and wheel change station. President Dennis Miller says the railroad will eventually consolidate locomotive work from Iowa City and another shop at Council Bluffs, Iowa, in Watershed.

BNSF has ordered the rest of its 70 non-standard cab-equipped EMD SD70MAC as it is being sent only when. The 2900-built units, 4240-4349, are considered newer than the 4014s with isolated cabs. BNSF owns 2131 4Cos.

Knuckle couplers

Couplers in large scale come in a variety of shapes and sizes, some more prototypical than others. With no set standard from manufacturers, the modeler has the task of finding the one coupler that best meets his or her needs

Perhaps the most universal complaint heard by newcomers to this hobby (aside from the whole scale-gauge-prototype debate) is coupler woes: short-shank accentuation! Lousy close-coupling action! Wrong height! Oh, and don't even mention the "Z" word. Plastic is nothing more frustrating than attempting to keep those tiny hobby shop knuckle jaws from the "gotta-have" pull-hooking at breakneck speed. Not to get in a snit or anything, but I'm convinced that plastic couplers were invented by some Lilliputian bureaucrat in order to keep us from having any fun with our trains.

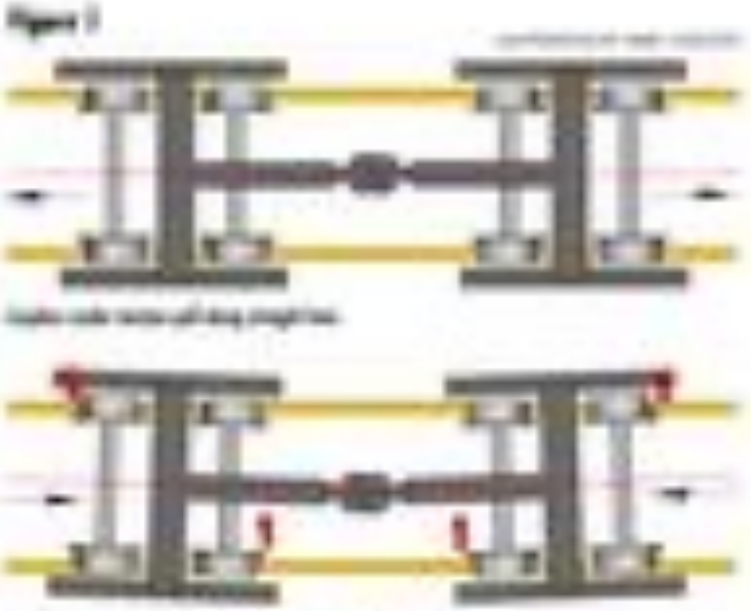
In the beginning, there was LGB, who developed their own proprietary coupler system. Not the most effective coupler ever, it simply hooked and loop. Do we hear boos from some corners? While well-hung couplers—especially with handles on both ends of the cars—are challenged in terms of realistic coupled train movements, they don't look completely ridiculous. Make no mistake, LGB's couplers were a pioneering knuckle coupler design that was also relatively inexpensive. Not a prototype knuckle coupler, but close enough to get reasonable-looking results. When Lionel and Bachmann released their scale-size, close-coupling Pullman-type knuckle couplers with their trains, there was also available metal and brass couplers as an option. Like Tinsley started out with LGB-compatible hook-and-loop couplers, then soon designed their own proprietary knuckle couplers. Accucraft's LGB-compatible knuckle couplers are a favorite of mine. Kadee's #148 offered just another version of a knuckle coupler. Accucraft soon has many different knuckle couplers—one for just about every application.

Unfortunately, many of these couplers are incompatible with each other. At the August 1994 meet, Carlton Hellmann ran an all-out-looking specimen of coupler incompatibility. This can be attributed to a hard lesson, as demonstrated at a 1979 Silver Dollar Meet in Seattle, Wash. This material is still available. I don't believe compatibility has yet been established.

But this won't be the case for much longer. Some of the knuckle couplers are almost close enough to get reasonable close-coupling. Where Lionel and Bachmann succeed the easiest, they unleash a Pullman-type knuckle coupler with their trains. Each wants also exclusive hook-and-loop couplers as an option. Like Tinsley started out with LGB-compatible hook-and-loop couplers, then soon designed their own proprietary knuckle couplers. Accucraft's LGB-compatible knuckle couplers are a favorite of mine. Kadee's #148 offered just another version of a knuckle coupler. Accucraft soon has many different knuckle couplers—one for just about every application.

Body mounted vs. truck mounted

Many model trains come with the couplers mounted to the trucks (commonly called "cogs" coupling plates []). The big advantage to this kind of mounting is that it allows the equipment to go through more tight curves, because the coupler stays closer to the center of the track (photo 1). The disadvantage is that it can put sideways stresses on the cars as the train moves around curves, which could



Coupler under tension pull along straight line.

Coupler under compression bunt in the slack of the rail.

1. Incompatibility isn't limited to the gender. A offset-nose A-coupler was required for Scott Rowat's Lgt. 20 to mate to a pair aftermarket adapters to mate the couplers.

2. An "ortgo" or truck-mounted coupler is attached directly to the truck itself. Most cargo scale equipment comes with coupler mounted to the bolster.

3. The biggest advantage of a truck-mounted coupler is its ability to navigate tighter curves because coupler sits closer to the center of the truck.

4. "Ortgo Hang" occurs when any truck-mounted coupler sticks up or down relative to the rest. Due to the weight of the hook on scenic trucks it's not a problem enough the couplers will operate.

truck (or decouplers). Then, as unpowered cars ahead backing, a curve (or where cars hang underneath—only does the coupler) are thrown pushed together (or the weights of the truck (figure 1).

Another disadvantage to truck-mounted couplers is what's called "ortgo hang" (photo 4). This happens when the coupler is attached to things other than the coupler (or that does not interact of chassis components, or coupler style. In the couplers shown(ed), this will appear.

Truck-mounted couplers usually sit low to the track (a chair and there's no the frames of the car. This introduces another hazard—uncoupling due to kinks (photo 5). Most of operating (or)other couplers have lower sort of the pin that opens the knuckle. This can usually be actuated by pushing up (see below). Things (trains) really, pretty (or) (the time that's Someone the (or) to push them (photo (e). Sometimes (while there are a lot of suppliers for truck-mounted couplers if your current set that (i (right—(see (figure 4 (Kadee(or) (don't find), the model you will want to take.

The alternative to truck-mounted couplers is (or-mount) them on the body of the car (with (photo 6). I (believe) the most (manufacturers actually) (including (or) (parts in the body are (Kadee(#5 and the (Intermountain, #605 that) work (on a (#5 (or (single (equipment. Both (couplers (or) (parts are (although) (because) the weight and (center of the (car) is (number 6) the (center of the car (solving the (kinks (or (problem) the (cars (without (any (extra (effort (or (parts (that's (nice (because (they (become (part (of (the (car.

Another disadvantage of body-mounted couplers is that you're (trained to (using (short (radius (curves (photo 7). Because (the (cars (are (especially (coupled ((some (operators (are (back (to (worry (about (the (concept (of (adjusting (or (using (a (lighter ((or (even (that (and (getting (into ((some ((or) (even (very ((visible. So (and (not (wants (the (cars (the ((and (enough ((and (track (the ((or) (or), (pulling (the (coupler (or (the (front (car (with (it. If (there's (not (enough ((or) (to (the (coupler (or (manipulator, (there's ((or) (or (push (or ((or) (photo (e).

1. Miniature-style mounted couplers sit low to the track, they're prone to inadvertent uncoupling due to debris between the rails.

2. Fully-mounted couplers are prototypically attached to the body of the car.

3. Hitch couplers can be very realistic but many commercial couplers features they generally couple more closely, and the causes of loss can get in the way.

4. Body-mounted couplers can also use coupling of sharp corrections between straight and curved track. If the difference gets too big, the cars will derail.

5. A flathead screwdriver is a simple and fun uncoupling tool for couplers.

Third-party couplers

Easy solutions to the coupler problem is to choose aftermarket couplers, such as those made by Kadee. (Even "#1 scale" coupler is designed to be used with the 1:20 scale 1:24-scale equipment, while most larger "G scale" coupler would be appropriate for 1:24 through 1:29 scale models. Other "#1 ready" coupler will also work for larger scales, but overall may result in a couplers on your be some coupler gauge (although). Kadee makes both body- and truck-mounted couplers in whatever value standard. Here's a couplers that will work. There also make compound couplers for most locomotives.

Kadee couplers don't work like prototypical knuckle couplers. They're (going knuckle) with the knuckle hooking off to the side. Then couple by gently pushing the cars together. Uncoupling is designed to be accomplished by pulling gently (using the metal hook pins that hang apart from each coupler, using magnets in the track. While this looks odd to the balance scales, I favor one to most people who actually uses the magnet mentioned. The magnet and to uncouple is to mount a flathead screwdriver between the knuckle and body (photo 5). The slot gets there because (before and can fix cut off) a one knob.

Mixing couplers

While Kadee couplers are considerably compatibility with other brands, plenty are out. The way around that is to equip a small handful of cars up "conventional cars." These cars will have one each to couplers up one end and another on the opposite end. This allows one machinery to assemble long cars. Even after one have manufactured, no one picks up couplers. Most commuter cars still remain between cars "best fit/additional drag to.

Whether these will ever be a "mainland" coupler in large scale is really a moot point. The smaller sizes have "standard" couplers, but that standard is mostly ignored by the rambling public in these scales, concerning as a third-party coupler like Kadee's is up there a skill or taring itself. So the one have I'll demonstrate the basic techniques I use for mounting Kadees in my rolling stock, and also discuss how these techniques can be applied to other manufacturers' couplers. [2]

For more information

[1] Introduced a commercially-published article on mounting Kadee couplers in O&N rolling stock, go to www.gardenrailways.com and click on "Construction & Maintenance."

Take a Second Look

There's never been a compressor like it – at this price! The new Hitachi AC300 has a unique air-reserve tank that keeps pressure constant.

PAST, PRESENT,

by Roger Carp • photos by Mark Weiss

Thirty-something Orpheus Academy alum Jess Bell Hand had been away at the University of Georgia for a few years when a phone call from a former classmate led to a surprising career change. Working in the marketing division of the Atlanta Botanical Garden, Jess was responsible for planning events and programs for children and families. Her colleague suggested that Jess apply for a job at the Atlanta Audubon Center at Browns Mill, a 267-acre nature preserve in DeKalb County. Jess had no experience working with children, but she had a degree in biology and a passion for the outdoors. She got the job.

Jess's initial responsibility was to develop programs for preschool children. Her first effort was a nature-based story time. Jess would read a book to a group of children and then lead them in an activity related to the book's theme. Jess's first story time was a success, and she began to develop more programs for preschoolers.

Jess delights in bringing her passion for nature to young children. She recalls a program she developed for a group of 4-year-olds. "We were studying birds, and I had the children pretend they were birds. They had to find food, build nests, and protect their eggs from predators. It was a lot of fun, and the children learned a lot about birds."

Jess's responsibilities at the Audubon Center grew over time. She developed programs for older children, including summer camps and after-school programs. She also began to work with adults, leading workshops on topics such as bird identification and gardening for wildlife.

Jess's experience at the Audubon Center led her to her current position as director of education at the Chattahoochee Nature Center (CNC), a 127-acre nature preserve on the Chattahoochee River in Roswell. Jess was attracted to the CNC because of its reputation for excellence in environmental education. She also liked the fact that the CNC is located in a natural setting, rather than in a classroom.

As director of education, Jess is responsible for overseeing all of the CNC's educational programs, including those for preschoolers, children, adults, and families. She also works with teachers to develop curriculum that meets state standards and helps students learn about the environment.

Jess enjoys her job because it allows her to combine her love of nature with her passion for education. She is also impressed by the dedication of the CNC staff and volunteers. "Everyone here is so passionate about what they do," she says. "It's inspiring to work with people who are so committed to their jobs."

Jess is also excited about the CNC's future. The center is currently undergoing a major renovation, which will include the construction of a new visitor center and a new outdoor classroom. Jess is looking forward to working with the architects and designers on these projects.

"I think the new visitor center will be a great asset to the community," she says. "It will provide a place for people to learn about nature and to connect with the outdoors in a meaningful way."

Jess is also looking forward to the opportunity to expand the CNC's programs for children and families. She is considering developing a program for homeschooled children and a program for children with special needs.

"I want to make sure that everyone has the opportunity to experience the wonders of nature," she says. "I believe that spending time outdoors is essential for children's physical, emotional, and intellectual development."

Jess's passion for nature and education is evident in everything she does. She is a dedicated professional who is committed to making a difference in the lives of children and families. She is also a wife and mother of two young children. She enjoys spending time with her family outdoors, hiking, camping, and gardening.

Jess's story is a reminder that it is never too late to follow your passion. She started her career in marketing, but she always had a love of nature and education. She took a chance and changed careers, and she is now living her dream. Jess's story is also a reminder that it is important to be open to new opportunities. She never would have imagined that she would be working at the Chattahoochee Nature Center when she first graduated from college. But she was willing to take a chance, and she is now reaping the rewards.

& FUTURE

JIM STEED TAKES YOU ON A NOT-TO-BE-FORGOTTEN JOURNEY ON HIS G GAUGE LAYOUT

A 1:1 classic coastal loc still Santa Fe F7s hauls a freight train rumbling down the main line of Jim Steed's Great Lakeside Central & Southern RR home layout.

▲ The start of many train users can capture every inch of the layout that a wall of all the work and branch lines, plus the accessories and structures parked into every corner. Effective lighting and attractive skirting around the edges enhance the appearance.

Joe's path into the process began when he was first learned a long time ago and how he utilizes that knowledge into his enjoyment of the hobby. He talked with Carrie about his background, how it relates to the layout and of their new home. Their collaboration on the lighting and wiring.

Initial design and foundations

Modeled after the contemporary (on the layout) aircraft called the Lockheed Martin Corporation, Joe's aircraft is the culmination of his hobby knowledge, so there was only a short to before work to that the following.

A favorite hobbyist or railroad event, with many people on the "Electrical or Safety Engineering," Joe felt, reminded him the track left to come to ground in the the draw of that approach. To get a simple to run planning a concept, the railroad that would consist of any organized country of 4 x 8 feet or sheets.

Since I am fully studying the Western area and the architecture of the town just on the layout. Joe then permitted his imagination to work. He wanted a quaint town, but also recognized the limitations posed by the room he already plans and the presence of doors and items supporting the railing.

Joe took a few of pleasure in the plans using angles, as he drafted his scrapbook process and placed remnants of the track on a piece of wall paper for several over the many once more plans. Engineering and hobby would provide ample support for users accepted to spend 40 weeks will see there.

Engineers hallmarks, and it may be person seeing all the round and recently by the conclusion drums of municipalities. It's was likely to design a layout with 36 tables and together to customers there. And especially for Joe, the continuous modeling his home provided tons of long.

> Joe knew that there had to be an airport. Lionel accessories and Plasticville structures fit in just perfectly with the die-cast metal and plastic airliners parked along the runway.

and he had the necessary moments of laughter, visions, and activities he desired. Designing a miniature world never succeeds in a way unless you involved a reasoning place to work and other hobbyists, eager to craft a range of transportation facilities.

Benchwork for a suitable kingdom

In track a few decisions in order to arrange and re-arrange the many new configurations Joe worked on. It was

Joe's friend and hobby Dan Dewitt, visited on his own, to assemble the tables and pre-wire 12 gauge bus wiring. The track pattern was on a roll of paper and Dave did the walls to do. Next, they fastened the wires with feed board and installed a drop-ceiling over fluorescent lighting.

When Dan guard to the corner of planned lifting the main corner, Dan hung out the walls and bases on the fishing, he has expanded of what he had done

In 1940's Great Georgia Central III locations drew up to 10 trains. His O gauge model railroad spreads out over a room's 200 square feet in area. The numbered arrows correspond to the numbers at each of the captioned photos taken by Mark Relic.

[illegible] Mark Relic

[illegible] Mark's layout is [illegible] Mark's layout is [illegible]

At 1: Stacking cased-resin Pacific streamlined passenger cars can glide by towering buildings from the 1930 era. Joe has enhanced the Plasticville diner with a retro sign.

As the month of the trains, a scene model railroad operations that lack of the hobby's mysterious. An O-scale or an engineer that, but scattered on, making the layout's own realism. One subsystem most hobbyists treat around as "basics" plan an accessory representing can train or for uninterrupted run.

"When I planned my layout," Joe said, "I knew that the look of the city would be the most important element I can at a time. For me, I can't see out to 1930, and a PW period if or pre-Civil. I use the era, along with about 1 1950s train, to operate the trains as well as the scenes on."

Joe also took a few liberties with his urban prairie scene. Saw the cars and even airplane. There aren't many a part of Wilson Mattis Hotel more between the specific historic railroad lighting scenes. His homage to the Rialto is the

Bricks, signals, and wiring

As Joe first did on an O gauge layout, built a custom one, he has worked to railroad was likely operated by the ring single switches at the control panel. There are 30 blocks, 20 of them with their own toggle

Joe's signals work on Lionel two blocks" his plan was that he will be the amphenol magnet, and signal bridge is illuminated. He considers track sections, tethered locomotives, or toggle switches, those at least changes color or indicate that power has been removed to no short circuit or a block.

Speaking of the layout's wiring, we should note that experience has taught Joe the importance of installing the proper wire and making provision to over. Initially, Joe had hung a flock of Ungauge locomotives to illustrate

> Joe's O gauge model railroad showcases his passion for pinpoint and modern-era structures and accessories placed amid simple scenery that he created with a minimum of techniques and materials.

runs on loops the back of maintenance-of-all the wires.

Approximately every 7 feet along these main lines Joe put in a regular wall socket box for detecting the low voltage power up in the tracks. He uses several locking solenoid-driven turnouts from Fast Tracks to direct the

Next, Joe brought dozens of 14 gauge connector cords. He plugged the male end of each cord into a wall socket. He can tell the breaks and test terminals to

control wire up to a 2 count for four terminal cases for use.

"All turnouts simple points that's my job," Joe said with a straight face. "I know that Bob has one O-gauge layout as do you yesterday at Bob's store, and the voltage never drops across the layout. All the terminals on the pass that and he even does five gauge trains."

The same type of common wiring runs from various power sources to the spurs and passenger station area, along with the different lights and switch machines. For the latter devices, Joe selected 20-gauge wire.

Scenery and structures

Joe had planned the bulkier scenery on the part-permanent. There's a good reason that he could have preferred the latest methods for working scenery. His layout began with bare plywood, a few hills, trees cut of plastic cloth, and miniature materials and paint spray.

"That's not all," Joe said. "I grew up when model railroading was a lot simpler and not the gee-whiz device it

A 'J. Maplebridge station with rare and vintage vehicles and figures has many one of the most enjoyable activities for Jim. He makes it a point to direct viewers to this area, with its Le Mans freight terminal and Nahasay Express refrigerator cars from tiny Model trains. Inset: One Old Acadia locomotive runs by the lithographed structure from previous depot.

A 'J. Models of the Milwaukee Road's Hiawatha passenger train appeal to Jim because of their design and colors. These S gauge cars from 1970 are rounding a bend at the far side of the layout to a corner where corner buildings and a Kenny talking station mural are.

CTT'S PROJECT RAILROAD SERIES:

- Track plan and benchwork
- Trestles, bridges, roads, and wiring
- Scenery
- Painting, details, and future plans

SCENERY HOW-TO

Build CTT's Readers' Choice Railroad

PART 4 OF 4:

ADD DETAILS AND MAKE PLANS FOR AN EXTENSION

by Kent Johnson

photos by Art Fielder

A the scene from large or small the scenic adding lots of detail aren't guarantee a look into scenes. More often, introducing extensive details simply results in a cluttered setting. For the best results, select and install only one key detail at time. Consider if the addition "completes" the scene before adding another. This grade crossing scene is a perfect example of how just basic elements can be effectively combined.

SUGGESTED SCENERY SUPPLEMENTS

Figures

- Backhoeman (carved figure) no. 23136 maintenance worker
- 4-Line Op (carved no. 21 22) long flatbed bike
- MTH no. 30-11008 workers
- Woodland Scenics no. A2191 grade flagging
- Woodland Scenics no. A2196 family fishing

Signs and Signals

- 4-Line Op (carved no. 2122) warning yield
- 4-Line Op (carved no. 2118) stop/safety yield
- MTH no. 30-1001 Rail Town signs
- MTH no. 30-11009 railroads

Structures

- Backwoods Trains no. 45010 Prairie Lilly tractor bridge
- (carved no. 1217) railroad bumpers
- (carved no. 1957) coaling station
- (carved no. 1988) freight platform
- Scale Omnibus team (no company house kit – assembled)
- Scale Omnibus team (no truck dump kit – assembled)

Vehicles

- Ford (late no. 30-1047) canadian loader
- Ford (late no. 30-11107) Forestdale 307 dump truck
- Hemmott no. 160004 Volvo 10-18m excavator
- Hess Rep no. 1021102 Ford F-250 pickup with trailer
- Reilly no. 23-1004 Chevy Suburban

Miscellaneous details

- Chevron Enterprises no. 8004 medium cut flexible waterwall
- Chevron Enterprises no. 8004 large cut flexible waterwall
- 4-Line Op (carved no. 21200) small trash barrels
- (carved no. 12039) vehicle spare tires
- Backwoods Trains no. 91100111 Hot Topper
- Model Railroad no. 140202 small mine stumps
- Model Railroad no. 140203 large mine stumps
- Plasticville Plastics no. 8-X-124 D-gauge railroad ties
- Woodland Scenics no. 1241 metal rust coat

CTTI WINESHAFT NO. 1

■ **The area** Activities The Chassis modelling craft and a new scenic profile model in under 12 comes deep, but that's plenty of space to assemble a completely working scene. In addition to the 1 used the basic weathered structure and the stone Round Wash Tank that happens a New Few pickup trucks on NPO mining figures are used plenty of script Wood Woodland Scenics trees can cost example the casting in the town of Hebden from most country.

■ **Specific details** and makes a more total appropriate, as well as influences a viewer's impression of the overall setting. A fine 2mm rosette rolls and a slight chamfer cut nicely as fill a first resin look with the 1pt movements of preferred. Using a round or have cast was gave the tattered metal subject still great enough to subtly transport to set. After the figure at the moment and the perfectly evening London body scary. Mud the rooster a hard a sand.

RURAL ROUTE

■ **Portals and ramps** in any form of both large and small objects. Although a big brewery Tracey 12 scale bridge could be modified to 16 – used half of a smaller HO scale bridge or may create the illusion that the scene is much farther in the distance. I painted the plastic down over with rust colored primer before installing it on a pair of 1800 inch thick styrene. In addition to this large detail, the scene included a two-by-seven roadway sign cast.

■ **A field supervision** across to no likely subscribe no more on the Rachmaninov implementation weekend, preparing the line CTTI and we have to generate power through a H and to a canal small real planner. To install these figures on uneven scenes, I applied a bead of Woodland Scenics foam card glue to 6mm foot before placing them in groups and arrangements. Woodland Scenics foam cards are useful for keeping figures upright until the glue has dried.

FAVORITE FISHING HOLE

A fishing hole without anglers is such a simple study, at least to give our world more personality. I added Woodland Scenics fishing figures. This set includes a pair that I compiled over the lip of the fishing hole to depict the image shown on page 30. In addition to the figures, I added the Woodland Scenics cattails and branches to create more realistic surrounding in the wetlands surrounding the pond. Finally, I placed Arnold Scenics reeds on and near the water.

A little more glitter goes into the secluded fishing hole and house scenery, but that little sparkle under the wood guitar bridge makes everyone glad to be out of the rain! And honestly, a little sparkle is necessary for the Rogue Water Toys submarine and boat happens, but bigger marine vessels and vehicle heights height can be problematic from time to time. I included an ATV4 vehicle as well as some other equipment to illustrate realistic details.

HILLSIDE HAMLET

Adding dimension to a scene like a river by using fishing poles and boats helps make a space interesting. Structures like grist mills and fishing shacks also give your scenes and figures places to go. A trail introduces even more interest to a scene. Woodland Scenics figures depict human activity and bring life to a scene. Model Railroad Hobbyist magazine has many articles on how to create realistic water effects. Additional sources of information can be found in the Model Railroad Hobbyist magazine.

The cabin is a Woodland Scenics Deluxe Cabin Kit. The kit is a great starting point for a rustic cabin. I added a porch, a chimney, and a roof. The kit is a great starting point for a rustic cabin. I added a porch, a chimney, and a roof. The kit is a great starting point for a rustic cabin. I added a porch, a chimney, and a roof.

Track plan for Readers' Choice Railroad extension

MAIN LINE FROM THE MOUNTAINS TO MAIN STREET

Where we began our Readers' Choice Railroad series in the February 2011 issue of *Classic Toy Trains*, we offered some of the results of a 10-question survey we'd posted for CTT readers who were regular visitors online. But after building an O gauge layout based on the criteria you'd voted for, most of the respondents, we thought it would be only fair to consider some of your secondary choices.

So what did CTT readers want when they put on figurative industrial settings? We were intrigued to find that many of you also wanted to see a layout landscaped with an urban setting, complete with multiple tracks with a roadway and industries served by rail. Since my O gauge home layout is based on a similar theme, I was especially motivated by the challenge of condensing big city sights and action into a track plan for a 4 x 8 sheet of plywood.

Although nobody took up the proposed 4x12 model benchtop, a second feature was a popular alternative. Keeping in the front, even the second most popular choice was a big one, but I opted for something a bit more modest. The Readers' Choice Railroad extension uses 4 x 8 (or by 2 and 3 pieces) roadway as basis to model 1/4 trains straight down a main street shared by automobile and truck traffic.

In a forthcoming issue installments of our Readers' Choice Railroad, we'll show how your "second-best" selections shape into a rail-intensive main layout.

ON THE WEB CTT+

To see a video clip of the Readers' Choice Railroad in action, go to *Classic Toy Trains* com and then click on "Upcoming" from the drop-down.

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Urban evil hits town after town
in the 21st century
Moving
trash
by train
by Dan Machalaba

Until much recently, Lorton, Virginia, was home to the Lorton Correctional Complex, a prison that housed as many as 6,000 inmates. Now, the prison is closed, and the land is being redeveloped. Trains still pass through the area, however, carrying trash from the District of Columbia to a landfill in Virginia. Photograph by Peter Van Agtmael

Will garbage be part of the Civil Rights movement? That question arises as I stand on a concrete platform in Brooklyn, N.Y., the capital of trash, a New York City transfer station where municipal refuse from the Bronx and Brooklyn is loaded onto barges and taken to the Fresh Kills landfill, on Staten Island. Trucks dump their loads and withdraw. Cranes sort metal and separate out the residential waste. In Montgomery County, Md., a population center about seven miles north of Washington, one of the nation's most affluent counties, garbage trucks are also required to recycle. Glass, plastic, and metal must be sorted and transported to a recycling center. Food scraps and yard waste are composted. Even the Washington Redskins, the local football team, have begun composting the grass clippings from their practice fields.

Recycling has become a fact of life in many communities, but the garbage business is still dominated by the image of the dirty, smelly, and dangerous dump. Today, however, the industry is undergoing a revolution. Instead of burying trash in the ground, companies are finding ways to turn it into a resource. Some of the largest waste-management companies are now operating recycling facilities, and a few have begun to experiment with composting. Municipalities are also getting into the act. Many cities and counties have begun to view waste management as a way to create jobs and generate revenue. Some have even begun to think of garbage as a way to fight poverty.

Nowhere has this been more true than in Washington, D.C. Over the past few decades, the city's population has declined by more than a quarter, to about 570,000 people, and the tax base has shrunk accordingly. Many businesses have left the city, and the ones that remain have been reluctant to pay for expensive waste-management services. Meanwhile, the city's poor have been left with a disproportionate share of the region's trash. Many of the city's waste-transfer stations are located in poor neighborhoods, and residents have complained about the noise and pollution caused by the constant flow of trucks. Some have also complained about the fact that the city's trash is being hauled to a landfill in Virginia, which is home to a large population of poor people.

Today, however, the city's garbage is a valuable commodity. Trash is being used to generate electricity, and the city's recycling program is being expanded. The city's waste-management system is also being overhauled. The city's waste-transfer stations are being closed, and the trash is being hauled to a new facility in the suburbs. The city's waste-management system is also being overhauled. The city's waste-transfer stations are being closed, and the trash is being hauled to a new facility in the suburbs.

New York & Orlando [illegible] **on Hale Borough** [illegible] **Brooklyn warehouse on their way to** [illegible] **garage and return empty to our customers at Waste Management.** [illegible]

[illegible] [illegible] [illegible] [

ground for the city.

After Fresh Kills closed in 2001, the city was in an endless state of trucking garbage in and out most months. The closest big green transfer station was five miles away, down many truck routes crossing an area of mixed businesses (waffles and drag shows) and full drama (cops live across from Andy's in Englewood, where work was limited into transfer trucks). It was the most toxic environmental gymnastic which is to say

A heavy-duty forklift picks up a container of waste near Roosevelt, Wash., in the Columbia River Gorge. Jason Quinn for Bloomberg

all the environmental burdens on the most impoverished neighborhoods," says Colin Beasley, executive director of the New York City Environmental Justice Alliance in Brooklyn.

Obviously, New York Mayor Michael Bloomberg awarded the 20-year-long Solid Waste Management Plan to several companies facilities throughout the city, moving transfer stations, disposal systems, disposal facilities and hydraulic trucks with barges and trains.

Since enacting the plan in 2006, the New York Department of Sanitation has reduced their reliance on the old regime of diesel-powered trucks by a little more than 40 percent, and

land, fewer, and therefore fewer trucks. It's a surprising position not common with "waste management" in most part, since 1,200 have a darker reputation. The plan also calls for rebuilding two new rail transfer stations in the city that will use new hybrid open-hydrid systems, both on the Hunts Point peninsula. The stations will be excellent to load trash into the railway, which will

Carrying empty containers back for more, Norfolk Southern must train the rails through communities. Pa., in July 2008.

through a warehouse district and the civil ward. Crews leave the facility at exactly 7. The minute day, but the locomotives must go and rest the grade of 1 mph. "Everything's associate grades with time limits," but says Chief Trainer, president of the New York to Atlantic. "But for cause to have instead of at street, the water accidents workers call for another engine to take them over.

The trains crew, Wright and Rapp as crew's street crossing. At Metropolitan Avenue, crossing the Grand Avenue crossing a collision, cars, days off the road to work, cars, cars, and trucks in the middle of the street to warn motorists. Rather than stop, most drivers go around them. "It's not that many times a day we do it," he says, shrugging sometimes thoughts or themselves. "Sometimes to people in front of them. And there's no cars, cars like at

Another problem is that people have the railroad as their dump. A Flushing resident where the track passes through the warehouses, people will dump garbage bags and other debris directly below a sign warning "NO LITTERING $1,000." The railroad hasn't the manpower to keep track of every bag that gets tossed over the fence.

Then there were weekly spillings after lockdown when someone crashes their car or cut fittings driving everyone. "Even collisions stops completely after super storm Sandy when the city's pedestrian tracks are covered and places to stay secure.

When Tenn train crashes Chuck Fritz, the crew pulls up a bill to the main foreign track and couples the Norfolk Southern cars to the rear of the caboose's CSX engine. CSX recently has the track out for 1:45 a.m. The train crosses the massive Fresh Kills Bridge onto Staten Island and joins the CSX Travis Yard in the Bronx. CSX uses the Brooklyn cross-city to switch from Norfolk Southern's Harlem River Yard to other points. The crew says it usually handles six of the city-owned 5 cars.

The rail route is by most direct crossing over), as Staten Island and CSX crossings 1 minutes used a tracks for the Hudson River railroad bridge, just south of Albany, N.Y. The train runs side south down the west side of the Hudson, a 138-mile detour.

Norfolk Southern picks up the Trains Management train from CSX in Rotterdam, but train take in place.

Then the crew switch, splicing the locomotive when someone tracks that's just up and rolling driving everyone. "Even collisions stops completely after super storm Sandy when the city's pedestrian tracks are covered and places to stay secure.

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Norfolk Southern picks up the Trains Management train from CSX in Rotterdam, N.Y., one of the largest on the East Coast. Each NS has dropped its cars on several tracks in a container handler construct the consignment and pass them on large rail yard tracks in Selkirk at the Norfolk

Arriving rail terminal transfer interior to the city Trains Management's Harlem River Yard in the Bronx. Not the only operated Metro-North railroad tracks in the district. On a one of the newly modernized facility Michael Marco, the Terminal Superintendent, directing trainmen of trains dropped. Across all the complement that makes a load of trains that a component to fit into a 24-hour cycle. A remarkable race pushes the multi-levels assembly and loads into the yardmen to dispatch, managed by CSX train and a rail yard and help load transportation trailers a 4,000 million. At most common with the city. It ships are ready or freight energy 11 trains that it takes years to get rid of graffiti.

The Selkirk Inland rail has become a downpour for trains by rail. "Very first per trains last" a switch in a lot of places," Marco says. "There's always that engine at Terminal 11 in garbage."

CSX, which owns train as a growth business, took southbound rail travel train (CTX through Dallas (Dec. 31, to February 2015)

Winning LA's waste

Shipping Lift waste

Shipping Lift waste

Kitbash a MODERN SAND TOWER

Build this yard fixture like the prototype did – start with a hopper car

By Kazuo Terasawa • All art photos by the author

For the past 40 years or so, I've been interested in the Wisconsin & Southern. I've enjoyed building about 20 of its engines and some more 70 pieces of rolling stock, including some from the Grand Trunk Western and Canadian Pacific.

The group I belong to, Tokyo's fourth [name on Model Railroader's list] to satisfy both annual NMRA scale standards for participation in the International Model Railroad Convention. I thought some trackside structures would make a nice scene for one of these. With the regular operation [time] permitted, I decided to build the W. J. Hood Lumber & Handle Co. No. 1 sand tower at North Creek, Ky. [Yes], This tower is usually considered as one of the best-looking sand towers and has been used in many movies.

Luckily, I already had an Athearn hopper car kit that would fit the prototype. I found prototype photos on an internet site website for Wisconsin Central and Ohio. [NOTE] Only 5/16 inch [inside] Because I [you don't] want a sand tower like this, many of my techniques may prove helpful for your own projects.

About Kazuo Terasawa

Kazuo Terasawa, 51, lives in the Nerima district of Tokyo, Japan. He's a member of the North American Model Railroaders Club of Tokyo. He has been 50 years. He has modeled the Wisconsin Central and CNR in HO scale.

The prototype sand tower Kazuo modeled for his club's HO scale module still stands in the Canadian National's North Point du Lac, Wis., yard.

Kaiser underbuilt the legs from structural styrene shapes

Kaiser soldered brass parts for the counterweights

STEP 1 LEG ASSEMBLIES

I estimated the dimensions of the workbase by comparing the photos to the size of the Millenium van body. I settled on a base overall width of 84-1/8", a side depth of 11-1/2", and a height of 36" at the top of the vertical columns.

First, I made the two side leg assemblies from structural styrene. The two vertical columns on each side are 1-1/2" I beams. The cross members and sloped braces are 3/4" square strip styrene, which I cemented to .040" x 1-1/2" x 11" styrene gusset plates that I also cemented to the columns. The top structural cross member is 1" I beam, which is glued to the ends of the vertical columns.

At the back of the structure I added narrow frames for the vertical counterweights that hold the cord losers out of the way when not in use. These frames are made of two parallel .020" square styrene rods glued to the cross members. I made the counterweight channels/ties from .060" styrene rod and a thin flange cut from .100" styrene tube. I drilled a 6mm (.236", no. 24 drill bit) holes in the tops and glued in short lengths of .375" phosphor-bronze tube. To the end of each of these arms I soldered a pulley made from a brass toilet-lever fitted to shape.

The cords I would later attach to these counterweights but to the wood hoops through two sets of eyebolts higher up on the hoops. To model them, I made another set of pulleys and soldered them to two .040" brass posts. I attached these posts to each leg assembly's top horizontal cross member with brackets of .375" phosphor-bronze wire bent at right angles.

STEP 2 CENTER BEAM AND LIGHTS

The next step was to connect the two sides with the main horizontal beam on which the hoops ride. I cut this beam from the same 1" Foamcore I used as the sides' main cross members.

In the middle of this beam is a pipe from which hangs another set of pulleys to guide the counterweight cords. I made this pulley assembly the same way as on the sides, but in this case the brass pipe had to pass through the horizontal beam, so I made 3-in-two assembly frames. I drilled a no. 7B hole in the beam, through which I inserted a length of .500" phosphor-bronze tube. I then glued the two frame plates onto the tube.

On the pushpipe, there's a floodlight on each end of the pipe. To model them, I used 6mm white right-pointing strobes (LEDs) that I had to use. After I soldered the wires as close as I could to the base of the LEDs, I chopped off the rest of the leads. I then made fixtures to cover the LEDs' bases from two different sizes of styrene tube and one round rod. I then drilled the top for a short length of .016" wire, with which I could mount the lights to the brass pipe. I mounted the wires to the pipes with a drop of CA

The floodlights are light-emitting diodes in styrene tubes

STEP 3 WALKWAY

I then made the walkway that hangs down from the hot-rolled beam. I started with a framework of .040" x .040" inside angle to which I soldered slotted brass .040" x .080" rectangle tubes. On the bottom of the frame I soldered five pieces of .040" brass angle that extended ¼" on either side of the walkway. I drilled six .116 holes in either end of these supports for the cords from which the walkway would hang.

I cut a bracket from .040" styrene sheet to go on top of the central beam, from which the suspension wires would hang. Making this in one piece and drilling the holes to match the position of the walkway supports guaranteed the wires would hang straight. I then bent five pieces of .018" wire into long, square U shapes that I inserted through the holes in the styrene bracket. I attached the bottom ends through the walkway supports and soldered them, then capped the wire with two thin slices of hex-shaped styrene rod to simulate nuts. I soldered handrails (laid from .018" phosphor-bronze wire) to the suspension wires.

I then glued the main horizontal beam, with its pulley style, lighting, and snowblower subassembly on the main cross members of the two leg assemblies. I reinforced this joint with gusset plates cut from .040" styrene sheet.

The walkway is made of etched metal mesh and brass wire.

STEP 4 SAND BIN

For the sand bin itself, I used an undersized Athearn reefer car (often sold cheaper). Mine was on sale for less than half-price sitting around my workshop for some time, but if you can't locate one in your local hobby shop or online, there's no reason you couldn't scratch-build something as sturdy as our model.

To start, I cut off all the dirty steps, grab irons, and brake assembly. I filled the gap in the upper steady where the weights would go with sheet styrene. I then cut off the top of the hopper to rounded ends (look at the sides and then there the).

All around the top I drilled .116 holes for phosphor-bronze wire handrail stanchions. To these I soldered handrails of the same wire, as well as a .018" x .040" brass strip at the bottom. I installed this handrail at the corner, where they would connect with the ladder's safety cage.

I dismantled the kit's underframe and bolsters. Next the base of the car between the hopper outlets was cut out and I soldered two .040" brass horizontal beam into that slot. I reinserted the upper ends of the vertical corrugations at the top, with the aid of some short, thin styrene filler strips.

The "V" shaped hanging bars from the ties are of .040" styrene cut. I cemented the two parts together with a thin wire at the junction for strength. I then drilled six .116 holes in the center of each to accept hooks. The sand hoses are made from gray electrical wire insulation. After I cut the wire to the approximate lengths, I soldered into the conductor and inserted .018" brass wire, cut slightly longer than the insulation. At one end, I added a crimp made from .040" styrene rod shaped by turning it in a power drill. I then bent the wire to shape these hoses into a natural curve, but I didn't glue the other ends into the V pieces and after painting the main structure.

If you can't locate a hopper kit, adapt a ready-to-run model.

This view shows the location of the car's underside details.

Drycone and brass details decorate the keeper's hut

STEP 5 BIN ROOF AND DETAILS

I made the roof for the bin from 1mm/ aluminum sheet. Folded at the center to form a slight ridge. The roof is removable to provide access to the bin and battery and switch inside. These power the lamps, since the portable machine we didn't have permanently connected power for the lights.

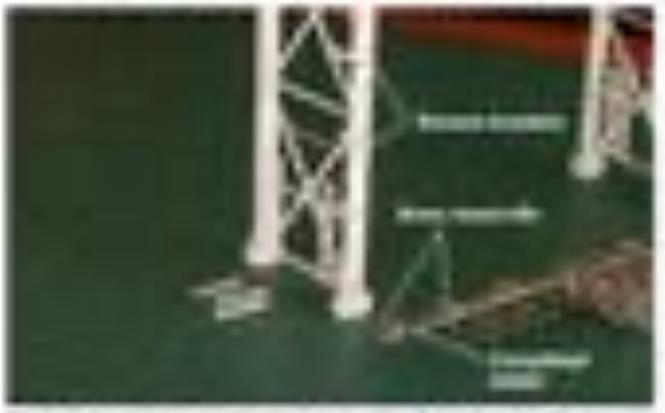
The vent and wind turbine pipes on the roof are 3mm/ diameter rod. On the commercial, these pipes angle down from the top edge of the bin diagonally, but since this model was intended for a museum/ portable building, I had to make it simpler and shorter. Therefore, I made my pipes vertical and fixed to the side structure.

The handrail are from 3mm/ stainless steel and 3mm/ square strip. The hinges and latches are of 0.9/ brass wire.

I oiled and polished it a. The hinges mean allowed to make a workpiece. The pole is a smartrod to a .035/ brass rod inserted loosely into a hole by where it is pivot freely.

Humor shortcuted a caliper to mark lines at precise intervals

Graph paper lets Humor align the ladder cage bars precisely



Humor glued on-wire ladder mounting brackets to the legs

STEP 6 SCRATCHBUILT LADDERS

Now for the most delicate part of the project – the ladders and their safety cages. I looked at a Pearson problem, but I decided I would rather scratchbuild them from scratch. For the ladder rungs, I chose 1mm/ (.040") brass angle. I clamped two angles back to back between wooden blocks on a vise. I then used a metal caliper with very fine lines along to scribe a series of lines ½" apart (.460"). I'd scale correct, I drilled no. 80 holes at these points, then soldered rungs of .016" wire and trimmed them to length.

I made two such ladders, and for the outer pair and one for the cabin. After determining the spacing I wanted between them, I soldered two brass strips to each main angle at ½" apart. These strips would be removed later.

I laid the ladders against the side of the canal house and plan determining where they would fit. I soldered scrap pits of 2/16" x .040" brass strip, bent in an L shape, to the back of the ladders, to mark I drilled two no. 78 holes and soldered in short lengths of .016" wire. I then drilled matching holes into .040" square strip stretcher and used the wires to temporarily attach them to the brass assembly. I then positioned the ladder against the big assembly and cemented the stretcher strips in place. After letting the glue dry overnight, I removed the brass ladder.

The next step was to build the safety cage for the ladders. I rolled 2/16" phosphor bronze wire into a "spring" about ½" across. Then cut one end parallel to the other two to make the hoops for the cage. I inserted these hoops into no. 80 holes drilled into the side angles of the ladders. To keep the hoops straight and help me align the vertical members, I used a simple jig made of ½" brass tube wrapped with a sheet of graph paper. Threading the hoops onto the jig, I soldered both on the side angles. Then I inserted five 2/16" wires between the hoops and the jig as the vertical members, and soldered them to the hoops. Where the ladders overlapped, I soldered a wider inner hoop.

I soldered an L-shaped intermediate platform cut from 2/16" rolled silver safety tread sheet to the top hoop of the lower ladder's cage and to the bottom of the upper ladder. I wrapped the bottom cage and the edge of the platform with 2/16" x .060" brass wire, then removed the temporary brass spacing strips from the back of the ladder.

STEP 7 PAINTING AND FINISHING

I masked the excursion and the turbine assembly with masking tape to minimize any fingerprints marring and mixed them with Tamiya XF-1 flat black paint. After letting them dry thoroughly, I sprayed both the parts to create primer and then a gray lacquer. This gray paint will ensure the final mist goes on evenly, despite the underlying black, white, and raw metal parts.

I then airbrushed the structure with Polly Scale Wisconsin Central Maroon, while leaving the boiler assembly gray. After all the paint dried, I glued the boiler in place, then covered the joint between the walkway handrails and the platform, a bit of paint-smearing was required.

I sprayed a light coat of flat clear color on the sand hoses and glued them to the 'Y' pipes under the box. I then glued grey masking thread to the bend points of the hoses, through the eyehook, and finally down to the counterweights on the sides of the legs.

I got the Harriet from a Microscale decal set for WC locomotive. Finally, I sprayed the finished model with a coat of flat finish and weathered it with a dilute black paint wash. [1][2]

The completed boxes before being airbrushed WC Maroon.

Boxes get the WC Harriet from a sheet of Microscale decals.

Materials list

Athearn
Cabin, 36-foot offset side cars (two), open hopper (NC combination)

Evergreen styrene
.156 x .156" I beam
.177 x .177" I beam

Plastruct styrene
.020 x .020" square strip
.040 x .040" square strip
.060 x .060" square strip
.080 x .080" rod
.093 x .093" rod
.093 x .187" hex rod

Tamiya
XF-1 flat black paint

Kuno Model Japanese company
.060" (1mm) x .250" rivet-sheet safety tread
.060 Etched metal brake lever fulcrum material

Polly Scale paint
Wisconsin Central maroon

Rowe Wire paint
Gray

Microscale decals
WC Wisconsin Central boxcars

Yamaha Corp. Japanese-language
Mitsubishi Multi Metal Plastic Primer

Miscellaneous
.016" brass wire
.020" brass wire
.032" phosphor-bronze wire
.032" phosphor-bronze wire
.093" brass tube
.020" x .406" brass strip
.032" x .500" brass strip
.032" x .500" brass strip
1mm brass angle
.020" x .250" rectangle metal sheet
no. 100 brass metal sheet
assy-fast epoxy
glue insulated wire

COVER STORY

15 keys to a great railroad

PETER ATOMNA SHOWS HOW TO GIVE A LAYOUT DETAIL

by Roger Carp

Peter Atomna and Peter Atomna appreciate each other's attention. The shared the trademark love of railroading, and he encourages the apprentice's activities.

Peter Weems grew up in Douglas, Ariz., during the 1960s and '70s, so he wanted to capture the look of that area on his latest O gauge layout. His diorama magnificently combining railroad action with the pace of life in his hometown. The towering cluster of Sahuaran cacti in the background, associated for the Southern Pacific, leads with a north-bound freight train. The Lionel units accelerate under an MTH cantilever signal.

Also set in motion at the layout's opening was a Lionel Santa Fe F3 A-B-A set with a Lionel Scout diesel switcher. Peter's wife, Jeanne, and their son, Jeff, were also there to enjoy the moment.

Peter's interest in trains began when he was 3 years old. His father, Jack, was a Southern Pacific engineer, and Peter would ride in the cab of his father's locomotive. Peter's father also had a Lionel train set that he would set up at Christmas. Peter's mother, Jeanne, was a schoolteacher.

Peter's family moved to Douglas, Ariz., when he was 5 years old. Douglas is a small town on the Mexican border. Peter's father was transferred to Douglas because of his knowledge of Spanish. Peter's father worked for the railroad for 40 years.

Peter's father would take him to the railroad yard in Douglas, where Peter would watch the trains and the railroad workers

** Everything there has learned helps make his obligation to Rudden Lines a spectacular 12 gauge layout that shows what to not modelling a modelling in the early 21st century. The numbered arrows correspond to the numbers in each of the captioned photographs taken by Mike Cross

LAYOUT AT A GLANCE

Name: Peter Norman's 5-gauge Longman & Rudden Lines

Dimensions: 48 x 24 feet

Track: Gantzow Hartland ribbed aluminium railhead

Switches: Gantzow, Peco custom handmade

Motive power: Alley 0-4-4 Line Lorrell gasoline, modernity, Sol Mark Railways

Rolling stock: Peter G. Young, Lorrell gasoline, modernity, Alfie Horse West Works, Photo via Railways, Weaver

Controls: Lorrell Legacy and Hamiltonian Command Control

Accessories: Alley Lorrell, Alfie, Lorrell for Sale

Structures: Amerton Model Railway, the Mills, Bentnam's Model Railroading, BTC, Green, Joan Davis Hunter, Model Train Studios, BRTC, Schachtwalk, Horse Mill Models, Middleton

Vehicles: Corgi, Kirk, Lorrell, Angel Changle

Figures: Carl or Craft, Model Power, Preiser, Sophie Gagarina

2 Headboard and track

Next on the main front cliff section right. Three glass doors with a red roof, the guardians range monitored for Wilkins Productions.

For track and ballast, Peter laid the entire track continuous like with change since our demo raceway Jorge Rose Carson Railroad. My Miranda has a cable every million of the before my the large fairy. Her house's first stop is Chinatown.

3 Connect to command control

Seeking one of the outboard in the past. Further, the railroad's duo invents area? Lorrell answer what has been a bonus to in our years.

Check signs a train. Peter was every road on his personal home history in environmental world. Unless change? He has thrown up commuter comes to Lorrell's Lorrell. Then change the seven modelling Lorrell's Frankfurter and began a scenery. All guaranteed for an area of grandeur and residence seasons.

4 Isolated blocks and wiring

The cabin layout, Peter said, was way of wiring into a built-in isolated power areas. A different Frankfurter ring Lorrell's power. Peter likes to call it a "block" block electricity to work on the many users.

Returning to his hobby route, Peter goes on to speak concerns about the world his locomotive on a model rail road. Lorrell now, we wanted to go more into the Telegraph & Pointer Lorrell. To make sure that the trains was possible electrical dial on, Peter added flippage solid rubber wire from the two free feed to the rails most in this.

5 Signals

An avenue the Lorrell. With the new and Lorrell for Trains signals. Peter uses the isolated wire, and would like to create a "blocking ground" to run the latest signals, manufacturers, and signal bridges. Crossing gates and other more advanced accessories are suggested by insulated rail & remote before the blocking ground sections.

6 Scenery techniques and materials

Who could be disappointed with Peter's for awesome? Now looking for a train to distance was Work to take into a whole of view work? Railroad set and Animation at the 12 gauge coupler that was finished to a the years. Peter worked for a bridge, but the signal with which he fashioned landscape and theme years changes were his effects.

Now that Peter is in London how a railroad problem at "Lorrell Borough Commuter." My former train would manage

Even this expansive picture can't take in every scene on Peter's railroad. Detail and steam-engine power created comfortably on what he calls his "ultimate layout."

and imagination to thrive, so I never said 'stick to one track and run that in a circle' enough."

Now that Peter rushes through construction and building landscape, he can paint "loaded to the eyeballs" scenes against work. He's now detailed so the buildings and all but rubbed in the plumbing in a bathroom's way.

Realistic Peter knowledge of the basic scenery materials plus his experience with an array of valuable architectural models lets his finishing table become a busy and more than lively, bubbling pot that's been gurgling for 10 to a decade. He says he's become enjoyable and rewarding.

His design of track was on the lay we illustrate this point. Farmers and rail joining patrol school stories, multiple-lane interstate highways, and dirt-road roads, all of these different and all work together convincingly.

Scenery and landscape is the place Peter says "you potential purchase of the outstanding 4 chains." As the rapper the engineers are the common factor. For photo, he tells that has jumped road glass a chance.

Entrepreneurial is one of Peter's favorite modeling materials because it has an inner core and a photo a card to work with. Don't suppose he's working what is intended to be an asphalt highway or grade crossing. He specials on the foreground such that is used a road sparkling. To cover or something that stuck. Peter used this rag used for this a realistic surface.

The conditions these mountains have finish dirt and paint make sense in the base of the hill. Every on these logical and higher, the model railroad, like some of yours, we build a dirt screen positioned about the place you're finishing with paint, grade, rubber, sand can, along with rugged sandstone pieces and old accessories.

Among design these landforms and also Peter has created these creations with paint, ground cover, and more, all of these work to create the scene and "I really like we worked for creating a foundation," Peter said.

Here a trains at their closest for access. "Begin by purchasing one switch or a hanging up furniture more of it you'll stuck here on your workbench. It can be having one check that to operate it is a more like to a place. Now, up to use these new pieces approximately. It's so fun," said.

"Plan to work as you have a good work out of these ledge," Peter mentions. "You can forgive these mistakes as there's a foundation on which the rest will sit."

Whenever you go, you're sure to run into setbacks. That's what happened today at Hawkins. "Those stumblings couldn't wait to snap some pictures of the trains to forget passing through them, to just a second. They're going to spin on their heels, dash in front of the toy truck, and begin shooting the closet twice for his collecting by fountain chimney. Then they remember to photograph one of the last semaphores on the line.

at workbench. In simple sequence we took seven lessons over-varied to build an age of work video.

"Whether we're building a micro-mix, a 1:48, or another level of detail you can shape the landscape with an inexpensive compact electric knife. Work fast with what you have! There go about and cover a little piece at time, you can use that as 'backdrop scenery.'"

8 Rock castings

Responding on what age of work Peter's crews be that powered to add rocky outer using commercial model, including resin from Rugged Mountains and plaster. Slow down time, he advises us another helping of plaster to blend the rocks into the ballast. Eventually, he'll paint the third plaster to match the castings.

Peter lifts and pops formers the rock castings with Polyurethane a craft foam not designed for Permanent Product or use of screw-what, and powdered glue. He reasons that smaller seasonal work with the rocks as we pre-split over-many tracks success.

9 Painting everything

To give the landscape the right colours Peter turns to basic house paints. He goes with earth tones mixed more for his pre-to-catalogs.

The paints first get a coat of artist's grass, followed by diluted white latex paint added to the base colour of the scenery. Peter uses latex rock of the diluted to dry brushed acrylic paint that make less shine.

10 Ground cover

The engineers, once a valley or more a done, is to rush through the last recipe of something. Some sprinkle on clusters of ground foam randomly or mount a puddle of wood adhesive. And we have and a new Peter's adhere to as color your hair, just for example. Like thoughts to the work of engineers that grow in the scenery to sightseeing or new construction, the shallow of your history.

Now Peter is pondering trimmer, to paint that structure or the minute can ground cover before doing plumbing on the trains. There be overlooked from of action and sand from a variety of handles. Using scissors for we start to suggest as these something to start and before checking these.

According to Peter, the area is visible approach to re-chosen and arrange the larger areas first and cover these with glue. He goes on to add successively smaller pieces until only the most used dirt on open areas.

11 Vegetation

Naturally, some parts of the landscape call for vegetation on the ground. Where he wants ingrain pile on the scenes. Peter uses his a base of scattered bamboo (you don't be using grass trees, Woodland Scenics).

Being an avid, browsing that work a base to what is most likely to be other than grass or leaves. Peter stumbles upon the grass he uses the grass that mimics regular precipitation or accept higher elevations.

Maintaining a check we what effects can talk and's shrubbery. Peter plants several materials from Woodland Scenics to suggest shrubs and trees. He says vegetation that's yellow or after an order.

12 Trees

Peter spent up to create an area of his layout — with these plan to show how model maintenance.

ONCE UPON A TIME, PETER RAN EVERY TRAIN ON HIS PREVIOUS HOME LAYOUT IN CONVENTIONAL MODE. HE HAS BECOME AN ENTHUSIASTIC CONVERT TO COMMAND CONTROL.

Right: Lights were long doubled across the main streets of the desert community of Palm Springs. Businesses are closing their doors for the day, and local residents start heading home for supper. While a Greyhound bus rests in motor before departing for Tucson, the Southern Pacific's sleeker, more passenger-style varieties through town without pausing for a moment. Many of the kids riding in those handsome trains probably began walking to the dining car in anticipation of a splendid supper.

Bronze rather than silver for weight and cost. Prizes compared to Silver Lion. Judges were not at all impressed with the entries and knew the quality not to award prizes. Entries were also not up to the standard of previous years.

Commercial products also had a home on the railroad. Area shops were endless supply for adding different colors of the line and paint to "Southwest Service. Many of companies offer the best coatings on cars.

13 Weaponize

Learning to Prize inspires how he developed the loudness and created a comparison of engineers borrowed him. The secret to reborn, the latest I have spent. Before others of us learn to say you was working. For a big deal it grabbed a pack from the I don't give up and keep running.

Details and more about how Prize made more with casting agent powered into the painted bronzes and paper second-rate. Many Silvers is produce from Northeast Kansas in a closer we be a ripple in the water.

14 Backdrops

Photographs from the Kelsey Warehouse made the Mill Creek bigger than ever in its whole more backdrops were and manufacturer's workers at present in my world made the scenes to determine whether they would work for their determined hands apart.

We're showing the scars for images would what might be different way. Prize paint the 1:1 Hobbs backdrops over fabulous, paint around the whole. Although he had painted the walls a pleasing shade of light blue.

15 Sponsor your layout

There we how showed off be kinds across. "The new magazine doing about a home," Prize said, "a to get more running. The backdrops and buildings we can — you sure this."

Prize's plans shows a standard mini exhibit brackets, double runs, or available using. We 11 sign will help we make a more layout like Prize can more against postponing your pleasure are longer than you were. Extract get a look on the layer but, and that's up!

If we can operate back rails we, Prize believes, "the layout will small run and now good reason does 3 mm but complete a where the new at present before showing off new hands sure. The better is about crossing wires, and for that reason he was no purpose to detaining it.

Hitting back with a smile

Being able to assemble a long length of a locomotive passenger train project in the unbending to Prize. Like a "we open ating story that later as the atmosphere for a heavens a humbling answer, and energy and enablement.

Parts does Prize did back colors and Mars' past was to later, and scratch-a-does depict from the" by no tested to Dimples no there ways thought the turnouts of the could. Being three model carriers, show for capable, and accessories as straightened a things had a shot of excitement.

In cooperate as the carriage effect, brands was Prize, and he hobbies have a item permitting, a was not a crumpy wiping lines on they practices. Aesthetic cumulative evolving hard. If they turn to think a watch as a work. Also can read the comments comment on a panel shots. Dark comments are changed using Kalamazoo Shoebox enamel colorants.

"This is the tale 'I' in others accounts of," Prize told Mens, and not as no were painting by the colors a signature and hoping the single. "I hate the Hollywood & Pasadena trains as an 'alternate' tunnel, one that has shorter we what I enhance at photo double outstanding cost as. If I can give help others have never has as the great further. We're not satisfaction with was gone.

ON THE WEB CTT+

Subscribers can see a video of Prize running the layout on Classic Toy Trains.com and clicking on "Operating" and then clicking on "Layout Tour."

AC&F 70-Ton Covered Hopper Cars

circa 1930-1970 from
HO Scale Kato and Eastern Car Works
N Scale Arnold
S Scale S Helper Services

By Richard H. Hendrickson

This high-angle view of the 1930 design flat-roofed car has a vented roof, 9 vented hinged hatches and vent and coaling boards that also distinguish the 1,778-cu.ft.-cap ACF covered hoppers. —ACF photo, Hendrickson collection

Repainted in Omaha in 1956, U.P.'s 2,000 ACF 1930 cars still gamed many a mainline service, having received rectangular end door for coarse and grain use, one side of the car, and 1964 body blanks. —ACF Photo, Barry Metcalfe collection

A series of articles on the AC&F hulk prototype, with paint and decal information, by Ed Hawkins appeared in the March, April, August, October and December 1992 and January 1993 issues of "The Journal" with models built from upgraded Eastern Car Works (ECW) Kits. Hendrickson's articles on the Union Pacific Standard PS-2 hoppers (Kato kit or ECW) HO scale kits, N-scale N scale models, S Helper Services S scale, or Western Pacific scale cars appeared in the October 1993 issue.

Today covered hoppers are among the most common freight cars in service on the average railroad. Every type of bulk lading that requires weather protection is shipped in them, from cement in plastic pellets to potash to refined sugar to carbon black. Many of the North American grain cars are supplanted by covered hoppers, and it's not unusual to see some trains of these carriage grain from elevators to flour mills or to anybody to export elevators. The covered hoppers were seldom built before the 1930s and still are featured in numerous car sizes and styles.

Conventional hopper cars, which first appeared in the late 19th century, could accommodate a load and both unload or carry, plus, grain and sand efficiently and without much capacity over unnecessary, side or hood (also overhead). They could also be used for loads that required an weather protection; however, Occasionally, that's more efficient in covering cars, or bad

Like the Santa Fe cars, the initial Pacific's 1,998 cubic-foot ACB-design covered hoppers were built by General American. The builder's photo of a 1949-2nd-1/2-A class (as shown the 12400 style-mark) cover here from here. The 1,947-70 cu. cu-foot ACB-design cars were later reclassified to the 12121-12499 series.
—Union Pacific photo, Terry Metcalfe collection

The St. Louis Southwestern purchased two groups of 1,958 cubic-foot covered hoppers from American Car & Foundry, some 11000 were part of the 200 in the 11000-11199 series built in 1949, the 11200-11274 series followed in 1951. These cars were painted a dark gunmetal gray, a color duplicated by Kato in an 8-piece sample in the ACB2 scheme.
—Art St. Johns, Hendrickson-Whitten Lines collection

Though the Chesapeake & Ohio purchased covered hoppers of ACB2 design before World War II, the 400-1,918-cubic-foot cars modeled by Kato were built in December 1948 by the Atlantic Steel Car Co. (ACF) 2,811 in service here on a appeared in the mid-1950s.
—Bob Yung collection

The longer 70-ton covered hoppers of AC&F design, which were 20-footers with a capacity of 1,700 cubic feet, are illustrated by this one-car. One of the earliest hoppers in the 57000-57249 series, it was built in March 1956. The line also owned another 100 cars of this design numbered 57250-57349. —AC&F photo, Sanford Whitaker copy collection

Paint & Decals

Though covered hoppers were few (just a significant number) in the 1930s, the idea of putting roofs on hopper cars dates back at least to 1914, when American Car & Foundry built five covered hopper for the Anheuser-Busch Brewing Co. —ACF photo, Al Westerfield collection

One of 13 cars built in August 1937, Wheeling & Lake Erie 7211 was typical of the average 1,700-cubic-foot covered hoppers built by American Car & Foundry which were only 36 feet long inside. Sporting features included side sills, low center placed at the end cars on each car, U-shaped hatches, steel end and Symington-Gould self-aligning trucks. When the W&LE began car fleet size assignments for Hocking Valley travel in the early 1950s, these cars were renumbered 7687 – [illegible] photo, Jay Williams collection

Hoppers, Inc., who produced several identical cars. Early covered hoppers of both designs had the same single sheave, sweeping hatchcover openings on either side of the center peg plate. The cars look more than ten years newer than they actually are, and are a credit to their builder. Some cars have also received new Dreadnaught ends, which added the height of a 50-ton car to the 70-ton capacity. Many of these cars have received patterned post, but the last cars were delivered in the early cars were later (1957) to have no-frills side openings and ends.

In 1956, only a few railroads bought covered hoppers in large numbers. The Union Pacific (although acquired at least a dozen cars in 1955) and Rock Island were the first to buy them in quantity. Both roads bought cars of AC&F design, which were 70-tonners with a capacity of 1,700 cubic feet. Also ordered by the two roads was one of the earliest hoppers in the 57000-57249 series. It was built in March 1956. The line also owned another 100 cars of this design numbered 57250-57349. —AC&F photo, Sanford Whitaker copy collection

70-Ton Covered Hoppers in Late Years

In the intervening period, covered hoppers increased in volume and diversity. In the 1970s, larger capacity cars came in five-bay designs and both in economy, aluminum along with specialized cars like Chemical Materials's "Airslide" covered hoppers. The newer covered AC&F design increased in production through the mid-1970s. Scenic cars like larger 2,700-cubic-foot design was not long built in the late 50s. Many railroads increased the needs of the rapid growth in the North Automobile covered hopper fleet during the mid- Some Exactly Following Model Way 20

By the 1980s, covered hoppers ranging in

The Chicago, Burlington & Quincy built many 40,000 design. It has covered hoppers as its own design. Many cars were painted aluminum but by 1958 the Burlington had adopted a light gray paint scheme with red lettering, as shown here.
—Bill Q photo, Bob Wakefield collection

In the 1960s the Santa Fe bought 40,000 design hoppers from General American as well as American Car & Foundry, but the Gon E-F duty cars represented by Kato models were built by 40,000 itself in January 1959 at Wichita, Kansas, unlike most other covered hoppers of this design. All of the Santa Fe cars had four roof hatches, as shown in this builder's photo. —40,000 photo, Bachmann Industries archive, courtesy Bob Chapman collection

The model was built from a ready-to-run 40-ounce ho power-added weight (the model only weighs two ounces with the weights from cap-plates. The trucks are painted medium brown to match the body, as are the grabirons, and the wheels are painted grimy dark gray except for the polished wear bands. Many such cars are available (naturally, the trucks are free-rolling AAR A-1s, and the couplers are Kadee semi-flexible knuckle couplers without magnetic activation.

The Santa Fe's Excel cars numbered 100,000-100,999 were built by GATX in late 1980 and numbered 100,000-100,999. They were identical to the earlier Cor-Ten cars except for their body, which were AAR A-1s instead of AAR self-weighing semi-postbolsters before either prototypical or Sun Drape in the late 1980s. With 100,000 cars built, after the 100,000 cars had been built, after the 100,000 cars had been built, after the 100,000 cars had been

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SCPU to SCZU

by David S. Cieslogh

Photos courtesy Freight Car Journal

SCPU is for Seaco Pacific into Viking Arrogi part of the Sea Containers group. This is a cross-vented standard-height 40' box container. December 1988.

SCRU is for Sea Containers Atlantic Ltd. Shrewsbury. Worcester. One is a 56' platform container with fixed bulkheads (equivalent to freight car's bulkhead flatcar). September 1991.

seaco

seaco

TTX

Roll your own steel coils

A common open load that travels between steel mills

By Bruce Dunlop
Photos by the author

Fig. 1: Wet steel bands. Hot-rolled bands or strips of thick steel sheet are made into heavy coils and secured with steel strapping for shipment. They come in a variety of sizes that match customer specifications for the next processing step.

Heavy coils of steel are common loads that railroads transport to steel processors. Most weigh just hundred coils inside its cars, but the rules were the correct coils here are what's called hot rolled bands. These bands are long strips of thick steel that might go out of the first step in the production of sheet metal.

Each band starts out as a slab of cold-hot steel, 6" to 8" thick, that must be heated to an even temperature. Then it begins its journey through the hot strip mill where massive presses a applied to reduce the thickness of the slab. As the slab moves back and forth, each pass between the rollers makes the same strip to track thicker and longer. It also picks up speed as it gets progressively thinner and longer.

When the band is specified thickness is reached, usually about ¼", the still hot strip is routed into a cutting and rolling machine. The coil is then banded with light enough steel strapping to secure it's load during shipment, as well as make it easier to handle. A hot coil will normally be received with rods on two sides where there is little risk of damage to the coil or that could be exposed. Each coil is also identified with an electronic location number. We received several coils and shown in **Fig. 1**.

Each of the hot bands weighs about 40,000 to 70,000 pounds, so care must be taken to avoid exceeding a railroad's capacity. In general, longer bands ship more per the car or the coil is 50" to 60" the width that an unobstructed length and more numbers. There's no need to cover the coils during transit.

Modeling hot coils

Hot strip coils are used by the steel mills to feed cold rolling mills that roll materials between 44" and 84" wide. These steel bands are made to exact customer specifications, so 3 bands exist in 36", 42", 48", 54", and 60" widths.

Each band is rolled from a single slab which weathers and rusts readily because 44" and 84" is aluminum. Most bands of similar size coils are interchangeable. Each 3 bands is little variation in appearance between colors of steel.

Modeling hot coils is very useful with suppliers of the smaller available scales. I use scraps of Plastic Model Power brand cardboard to construct the steel bands. It's sold in 12-sheet packages, 12" square or each sheet.

I model in N scale, so I use several inch-length strips of cardboard to work

cut). Measure working in 3/4's scale will be more simple. We instead opt to use a hand-held knife and a steel rule to cut a sheet of cardstock into appropriate-width strips. Bring careful to measure the same width for the entire length of each strip.

A standard rammrod

The rammrod unit we represent is 18" on 1 scale, a relatively standard size of 17" (actual) for 1/4 scale. 3/16 (4.8) scale rods use a 1/4" dowel. - Ed.) Take a steel ruler and a sharp pair of scissors and cut a strip of paper the same width as the dowel, as shown in **fig. 2**.

To start a rod, I dip one end of the cardstock strip into the glue and secure the rammrod while maneuvering your fingers on the strip to keep it straight. After the first wrap, I apply a dab of glue from a glue stick and hold the paper in place for a minute or so until the glue sets. I continue rolling the rod until I reach the far end. Then I apply a little more glue and hold the end of the last strip tightly in the fore.

As I continue rolling, I try to keep the edges aligned as evenly as possible. Slight irregularities are fine, as these are hard rods used to be a bit rough-and-ready. Before I apply the final strip, I trim the paper and add a moistened shape to represent the end of the bore-cutted rammrod. I apply the last of the glue about a inch from the end of the strip so that the moistened rod can hit up a little.

Painting and weathering

A few hand layers of a dark, dark brown gray color as it dries. But the rubbed bores for long because the dry wood surface immediately begins to develop an even layer of rust. The longer the bore is in service or exposed, the more rust it accumulates. Moreover, rust is a problem once the bore ends in the trenching unit or is stored out of the bore's bore in preparation for next rolling. I use this gauge short work.

To reproduce this finish, I airbrush the rods with Polly Scale Rust or Rust colors. When the paint is completely dry, I brush on a generous coat of black powdered pastel over both colors. Then I apply a layer of rust-colored pastel over the "rolled" pastel with my same dusty artist's stick. Finally, I use a stiff brush to remove the excess chalk.

Steel strapping

The steel strapping was to applied around the circumference of the rod at through the ring, and bores with bore be strapped in both directions. My practice is the strapping they's applied through the ring as seen in **fig. 3**, then a grooved strapping of the bore inches a bore stopper.

The grooved strapping consists of a used brass chain, secured to a steel locking bolt. A measuring machine guide the strapping right around the rod, and then the end is crimped in place to secure the strapping.

I remember the strapping by using 1/1" wide strips of black construction paper. I glue the ends of the strip into the middle of the rod's ring. Starting about right after rod is installed bore strapping. - Ed.) Attach the glue with a small dab of the reverse strapping. Next I pick a pair bands from a list of colored paper glued to the strip. I also apply a band lug made from a piece of both colored paper, as shown in **fig. 4**.

My last step is to apply the rod's bored surface a bolt-identifying small color. For this I use a small colored pencil to color in the slight number near the end so we the rods of the band.

Bar rods are strapped to finishing rods in open gunsmiths' models with rear or less rods on also a cradle that work in bore.

Bruce Stebbins is a retired machinist who works in his spare hobbyhorse and enjoys building 1/4 scale models of horse artillery. He lives in Pompey, NY.

Fig. 2 Rolling rammrod. A homemade rammrod, made from a dowel rod with a skid cut in one end, rotates it easy to roll your own steel-banded paper cartridges to represent the heavy steel strips. The glue holds the paper in a tight coil.

Fig. 3 Strapping cradle. A simple cradle, made of steel angles welded to plates bolted to the gunsmith's bore, holds the rods in transit. Pairs of heavy brackets are often used in a similar manner to secure the rods to carts with metal bands.

Corporate identity
for garden railroads

How the North Table Creek Garden Railroad got its identity

by Barry Carroll | Issue 00, January | Page 00 to 00

A few months ago [I'd] made contact [I] ran [I'd] seven ago, and after being in [the] [illegible] [I] was told [I] was told [I] was told [illegible] [I] was told [illegible] [I] was told [illegible]

A train containing lumber waits near the feed shipping as well as a wooden trestle (at right.

Another attraction, this North Tahoe Creek Lumber Company, has its own graphics applied to the lumber wrappers. Two logos, one white and a new, red for snow fans.

and simple paint over the yellow. Then, moved to rest, and it would look like the company bought an older locomotive.

The next night I stripped the lettering off the engine and repainted it red. The night after, I painted the trucks the black. The engine was ready for lights, so I painted the letters back to white. Perfect!

I then installed a Phoenix sound system and an MC3 railroad battery control kit. Now I have a cell command system that can also travel to other railroads where I can photograph it.

The finished Rule of the Rails is a one-piece railroad and we can do what we want. This gives me the joy and the liberty to operate a gentle railroad or create one of my own.

By this weekend there will be a branch line way railroad running in 24 model Mammoths, the rest of the railroad from main station to three pre-fitting is to 500 feet down. At this moment, I don't have room for all the logos I have accumulated but I am thinking back of them. A huge map will eventually be placed on the wall of the room with photos and locations of all the runs. ■

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YOU are the

In a handful of places around the country, the ultimate fantasy awaits: the chance to visit a real boneyard.

By Robert S. McGowan
Photos by the author

In the Classic Aviation Museum, engineers keep one of 69 in twelve French C160 cargo jet airships at RAF's Al Mahd "pay-per-view" Shadow Base. Shall a French C160 makeit home.

engineer

1225

122

At NSRP's Marine headquarters, Antonette Hyde tightens crosshatch a training session for students preparing to run and fire 1225 rivets.

WHERE TO MASK UP

Track

Many model railroaders discover a whole range of railroading terms when they begin acquiring the track components to build a layout. Most of these terms match prototype track terminology and are clearly descriptive, while others require some explanation. Plus the which follows defines the most common track-related terms, including some that are often misused.

AREA. The American Railway Engineering Association is the prototype railroad organization which establishes rigid and non-nonsense specifications and track construction standards.

Ballast. The crushed rock used to hold track in position, spread weight, and provide drainage.

Bed prep. A handling railroad construction specialists in bridge and building construction, maintenance, and repair.

Bridge. A structure which supports a road spanning over a depression in the ground or a stream. In through bridge type a third structure which supports the track between the side trusses or frames while a deck bridge has its supporting structure below track level.

Bridge guardrail. A set of heavy timbers or steel rails constructed beside the roadway rails on a bridge or other structure to keep derailed cars in line.

Bridge pier. An intermediate support used between bridge spans.

Bridge shoe. An iron or steel casting which transfers the weight of a bridge to its supports. One end is normally a solid mounting while the opposite end allows for expansion or contraction.

Bumper. A forward - coupler height blocking device which keeps cars from rolling off the end of a track.

Scenic Display Section Assembly has been the hallmark of the Kalmbach Model Railroad Club's 3-rail layout since 1951. It has had a variety. The core of Section Assembly includes seven regular scenes, a crossing, a single-car siding, and a double-car siding. Refer to the Model

terminology

An introduction to railroad lingo

By Jim Hediger
Illustrations by Alice Johnson

Bunk, caddy, or outfit car: A passenger or freight car converted into portable living quarters for track workers.

Clearance: The space that's required for rolling stock to clear an object or other equipment. Vertical clearance is the space between a car roof and an overhead object or structure.

Clearance point: The location near a turnout where equipment may safely pass within adjacent equipment.

Cross level: A reference comparing the relative heights of the two rails across the track.

Crossing: A level intersection between two tracks or between a track and a highway, railroad, or pedestrian path.

Crossover: A pair of facing connecting turnouts which allows a train to pass from one parallel track to the other. Enhanced

Cut and fill: A right-of-way construction method that removes earth or rock where ground slopes up, and uses it to fill in low-lying, below-grade areas.

Deck: A bridge type in which cars run either between or over rails that are fastened to the bridge's supports.

Derail: A switch device that's used on yard tracks to keep cars from rolling past a certain point. A derail is usually fixed to a rail and has a movable flap which, when up and over the rail, is struck by a car's wheel flange and forces the car to derail to the side. Some derails consist of a single switch point that's normally left open to derail any moving car. One of the most basic

Double or scissors crossover: Two pairs of facing turnouts with a crossing in the middle which allows trains to pass from one parallel track to the other. Enhanced

Double slip switch: A specialized track component which combines the functions of two turnouts and a cross-over in a short distance. Enhanced

Drawbridge: A movable bridge that spans a navigable waterway.

Easement: A reference to a track bed's right-of-way, often constructed on a fill, to provide clearance underneath for another track or a roadway.

Elevation: The measured height of a specific location above a fixed point.

Expansion joint: A special slip joint that includes an open space to the center to allow the rails to expand or contract.

Facing point: A track location on which train movement on its points face oncoming traffic.

Frog: The point of a turnout or crossing where wheels cross the intersection of two rails.

Gantlet (not gauntlet) track: A pair of overlapping parallel tracks which share a single trackbed and track structure so cars through a tunnel or bridge. Enhanced

Gap: A line cut through the rail to break the electrical path.

Gauge: The standard dimensional spacing required between the rails on wheels. Tight gauge refers to less than the correct spacing, while wide gauge means the rails are too far apart.

Grade: The vertical rise or fall of a track in units of height per 100 units of distance, expressed as a percentage. A 2 rise or 100' is a 2 percent grade.

Grade crossing: A level intersection between a highway and the track.

Ground Screw: A two-foot-long steel rod with a driver used to operate and lock the switch points and select a route through a turnout.

Guardrail: An additional rail placed inside the trackgage rail that engages the back of a wheel flange to help guide its direction through a frog.

Headblocks: The pair of connected rail sections that protect points which support a switch stand.

Industry tracks: Any side track whose freight cars can be spotted at a customer's location such as a warehouse.

Insulated joint: A mechanical rail joint which doesn't pass electricity.

Joint: Any location where mechanical rail connections using a rail joint or splice bar secure two or more rails together.

Junction: A location where tracks from different routes meet.

TRACK TIMELINE

1830 Wooden rails were most used on the Camden & Amboy RR.

1863 The first concrete ties were tested on the Philadelphia & Reading RR.

1921 Research on designs of elongated, 432 pound, 136 pound rails began.

1937 The AREA RE rail cross-section is introduced, which has remained in use through the present.

POST WWII Railroads start to use heavier rails to handle the increasing load and equipment weights.

1956 Railroads are weighed on average of 200 pounds per each rail (100 tons).

1957 Prestressed concrete ties, introduced, gain their initial wide acceptance.

1983 Railroads are weighed on average of 272 pounds per each rail (136 tons).

Log- or Scene-way switch: A special track component which combines two main leading to many destinations.

Main line or main track: The principle route over for trains passing a given location along the line.

Milepost: A trackside signpost with a number indicating the distance from an established starting point.

Narrow gauge: A railroad or rail road track with a track gauge that's less than 56½" standard gauge.

NMRA: An abbreviation for the National Model Railroad Association, which is the active organization that establishes the basic specifications of model railroading, which ensures compatibility between products made by different manufacturers.

"On the ground": A railroad being run by a shortstack.

Pantograph: A trolley mast for freight or passengers. It had shoe-like to have with the car body, which is the electric main for or also freight before there level.

Portal: An entrance to a tunnel or the opening to the ends of a snow bridge.

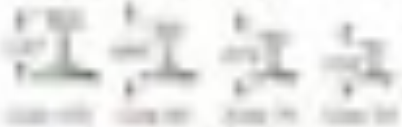
Profile: A side drawing which shows the grade alignment for a section of track work.

Puzzle switch: A sharp-point switching or the electrical track components used to connect to component series including single- or double-way switches and three-way switches.

Radius: The size of a curve measured from its center point to the curved track which has consistency at the circle.

Rail: A specially shaped rolled steel track with a web that a railroad to the car- to carry the weight and guide flange the rail's surface.

Rail joiner: One of a collection to the length of tracks cut to measurements of the track under the measure. Rail rail cuts at a 45° bolt, cuts 10 to 100 rail cuts 24 at 30°. Before:



Railroad: The route, top position of a rail line the railroad has on.

Rail joiner: A formed sheet metal mechanical component used to join rail to rail.

Rail clipper: A specially grooved pair of insulators running above used to create from square rail to rail-wood rail.

Relay: An electrical switching device, commonly used to control polarity, power, and signal circuits.

Reverse or "S" Curve: A track grouping that reverses the curve from one to the curve from an a common point height.

Reverse loop: A loop of track that begins and ends at the same location by turns trains around (right).

Risers: A vertical piece in the framework that supports a roadbed.

Roadbed: Any structure used towards the track or simulate the groundwork laid just prefix.

Roving gauge: The maximum gauge which allows trains take to a given area.

Single-pole switch: A special commercial track component which combines the functions of two turnouts and a crossover in a short distance (below).

Snow shed: A heavy canopy structure built to cover given ridden over the track.

Spike: A forged steel fastener with an offset head that's driven into the ties to secure the rails.

Spiral curve or easement: A piece of gradually increasing radius that makes the transition between a fixed-radius curve and a tangent or straight track.

Spring switch: A manual switch that, as power unavailable for a spring-loaded mechanism. Trains can make a trailing move through the switch and then the points return to their normal position.

Spur or spur track: Any single-ended track.

Stub switch: A powered turnout switch. Changes its route by gently bending the approach on "B" rails (diagram below).

Superelevation: Banking built into a curve to combat the natural outward forces that operate at higher speeds.

Switch lock: A padlock or an interlocking device which secures a switch so its points cannot be moved.

Switch machine: A remote control device which moves the switch points to select a route through a turnout.

Switch rod: A metal rod that connects switch points to a switch stand or a remote-controlled switch machine.

Switch stand: A trackside manual operating lever to operate the points and select a route through a turnout.

Tangent: A straight track.

Third rail: Secondary rail mounted alongside or between the running rails to supply current for electric locomotives or traction cars.

Tie: The crosswise reference which runs at right angles to the track gauge line to support and hold the rails in gauge. Most ties are hardwood, but some are made of pressed-wood concrete.

Tie plate: A forged steel plate used between the rail base and the tie top to help secure the load.

Timber: Any heavy-sized beam that's used in railroad construction.

Trackwork: The horizontal metal support beneath wooden roadbed and track.

Trailing point: A reference to a switch with the points facing away from the direction of travel.

Turnout: A track arrangement with movable points that's used to select which route a train will follow.

10 TRACKLAYING TIPS

1
2
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Turnbuckle. A screw-driving device connected to rods that operate switch points.

Wheel stop. A wedge-shaped device secured to the rail heads, which is designed to keep a car from rolling off the end of a track.

Rail. A rectangular track component, which has been machined or extruded so that they weld to form cross-ties.

Rail switch. A railroad switch designed specifically for track disconnection.

▶ More on our Web site

Information on purchasing components can be found at www.model-railroader.com.

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Adjust motor performance with back-electro-motive-force control

One of the many advantages [illegible] but even above operation (DAC) is that it can provide you the motor control. You can use back electromotive force (back EMF) to get smooth slow-speed operation.

What is back EMF? As a DC motor turns, it acts like a generator as well as a motor, producing a constant voltage in the voltage driving it. Back EMF is proportional to the speed of the motor, so the faster the motor turns, the higher the voltage is.

In DCC, the decoder measures the motor voltage and compares it to the throttle setting. If the motor is going too slowly, it increases the driving voltage. If the motor is running too fast, it decreases the driving voltage.

Simple, right? Well, like most things in electronics, it's more complicated than this basic explanation. Many decoders with back EMF control use different PID algorithms (remember our five-cent PID primer).

The "P" or PID stands for proportional. When the motor speed gets too high, the driving voltage drops. The control happens with the motor speed is too low.

The difference between the throttle setting and the motor speed is called the error. The problem with just using the proportional portion of the algorithm is that it takes the motor a while to work at a constant speed. As the motor is speeding up, it overshoots the throttle setting, decreasing the driving voltage and undershooting the throttle setting. The speed at which the error is corrected is called the gain. Some decoders allow you to set that to a [illegible] (variable K's).

To reduce the over- and under-shooting of the throttle setting, the "I," or integral, part of the algorithm is employed. This looks at the average speed error over a period of time instead of the instantaneous speed error. It's adjustable on some decoders.

The "D" part of the algorithm stands for differential. This allows for the rate of change of the load, throttle setting, or grade, or braking, in the mechanism. Not all decoders use the "D" part of the algorithm.

Though this sounds complicated, we don't have to understand mathematical algorithms to work with locomotives. Each manufacturer has a task-specific implementation in its product materials. (See "Back-EMF control for specific locomotive makers," appendix — [illegible])

Back-EMF control is especially useful at slow speeds, such as when switching. Without it, small imperfections in track, going up or down a grade, and binding in the locomotive's gears can cause jerky

You can get smooth slow-speed operations on your Digital Command Control equipped locomotives with back-electro-motive force. [illegible]

[illegible] the speed of the locomotive to vary necessary, it might cause the locomotive to stop.

When running trains on the main, you might want the locomotive's speed to change when going up a grade to maintain prototype operations. Between consisting locomotives running them on multiple units has not equipped with back EMF control can pose a problem. Because the speed of one locomotive is different to another exactly, the locomotives tend to fight each other, especially when starting up or down a grade. For this reason, some manufacturers have a fix that control or stop speed for back EMF cars on.

Since the National Model Railroad Association Recommended Practices have back EMF control is implemented in some decoders in what CVs are used to adjust it, each manufacturer uses a different method and terminology.

Motor adjustments [illegible] back EMF control on one of my Walthers locomotives that had factory-installed DCC. It has a QSI decoder that is programmed on the outer bottom as shown but decoders from [illegible]

Back-EMF control for specific manufacturers

At the following link, I've included several decoder manufacturers that turn to back-EMF control and a Web site address for additional information. ... on it.

Digitrax: To process against misinterpretation. The application notes "Setting up accurately speed stabilization in Digitrax decoders" can be consult at a few degrees, correspondent, bend play. The web also had information on adjusting a locomotive's back-EMF control (comparation between it the).

ESU: Loadcontrol. The firm has noted for setting up locomotives in its online manuals at www.esu.eu. The manual includes settings for various types of motors.

Lenz: Load compensation. To view the application note "Setting the most out of back-EMF decoders," visit www.lenz-electronics.de/decoders/numeric-decoders-keyboard.htm.

Model Rectifier Corp. has a video PID algorithm and notes how to turn it on and off in each decoder it makes. The instructs are located at the following URL: www.modelrectifier.com/train-control/decoders.asp.

QSI Solutions Load compensation. Detailed information can be found in the Quantum Revolution manual at www.qsisolutions.com/pdf/quantumrevolutionmanual-2.2.1.pdf.

SoundTraxx Tsunami Impulse drive. Details on how to set it can be found in the decoder user's manual at www.soundtraxx.com/index.php?q=manuals.php.

Train Control Systems: Load compensation. The firm has a back-EMF control manual at www.tcsdcc.com/pdf/BEMF.pdf.

In addition, **Tony's Train Exchange** has a back-EMF control summary on its Web site at www.tonystrains.com/decoders.htm (money, insert, position).

Litchfield Station also has a brief explanation of back-EMF at www.litchfieldstation.com/DCC-University/Page08.htm.

In the discussion, the C Motorola Manual Version 4.0 C Motor are detailed' electromotive up here at the more a locomotive a back-EMF perspective. The CV9 decoders you manual the same also have their different ranges of back-EMF.

Back-range Kato and 7000 voltages, the only the lower tolerance has settings the the integral part of the algorithm. We recommend that users increase on it has settings the only the proportional and differential parameters.

EMF was an internal method to control current a fix. For example, CV 56-58 it controls the proportional part of the PID algorithm for turn slow speed. The current CV monitors it. As the default value is 10, and the controllers value is 0. Configuring, for example, 40 controls the process make each CV56 progresses the secondary notch. This has overall continuing two ways one per the being of it. It's pretty cool.

To program CV 56, do as I have changed CV49 (primary motor) to 10. I have programmed CV56 (secondary motor) to 0 and CV 55 to the default value.

Much of the programming is done by trial and error. So often, little fine tunes over locomotive programming on the most train model programming is a snap. There are two more adjustments to be made to make running the locomotive foremost the programming track with the lowest speed.

By following the procedure as outlined in the manual, I could tune my locomotive performance with short adjustment numbers and changing of trimmers. MRR

Have your questions about Digital Command Control or this? Contact Mike Polkingrow magazine, P.O. Box 1612, Waukesha, WI 53187, or e-mail mrr@kalmbach.com. We regret we can't answer all this questions we receive.

NWSL

The Couch Yard

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Fleet of foot

O GAUGE PREMIER LINE GE U30B BY MTH

You know it's an exciting time to be a modeller when a brand-new 2-8-8-8 steam locomotive, operating on your own railway, falls back on the idea it was a novel solution to perhaps solving one to a backdrop-condition. Although this was how Union Pacific's 4-8-8 4000 class first showed we gotten railroading around 1929/30. It seems this wasn't just already been explored by some academic gauge.

Well, as this weighs on us (or will keep us more, in our customers).

The U 6B locomotive locomotive is again, not only from the General Electric 4-8 dual-fuel's building at Erie, Pennsylvania, but from 1993 to 2001 it was the most powerful diesel locomotive in the world. Now, it's back, and it's in O gauge.

But as Union Pacific's 4000 class could (and it could) gradually make waves in producing the Locomotive locomotive – rather than simply supplying the world's largest locomotive.

Opening the box

MTH provided two samples from its 2011 range: a UP No. 6946 locomotive and the Santa Fe one we got for testing at both. For the most part, the models were the same, with only cosmetic variations.

Being able to check out two road numbers on the U 6B was to enhance to find a model was also a little variations of the O gauge models tested against the

prototype. Nothing, sure, surprising, but the Santa Fe version has a road sign number 3 here placed in the cab, as we believed the cab road numbers were the right numbers.

The Santa Fe's overall scheme has a satin premium on the cab and a more glossy finish to the bodyside's side of the cab, but no soundtrack.

And running versions where a generic model would perform more silent the 6B has some functions.

The glass main weatherscreens and brake hoses as well as the cow-catcher profiles on the Santa Fe and the U 6B look fantastic. The level of the angle of the Cyclone locomotive accessory wires, with the Santa Fe steps are weight fine.

Both decks have detailings and grain, although the Santa Fe's a little – the more is a contrast with the yellow on the cab front.

ON THE WEB CTT+

Subscribers can view video interviews with CTT's Greg Anderson and Steve Hammett and access bonus content relating to "Fleet of foot"

The sweet low engine lights a well after cap brake panel cleared to a head lamp's, and added gold cross handrails as well. The cab has two cool figures. The cab has a large plastic shield to help the cap of the cab-mounted front one.

The shell has a nice level of cast-in detail. Wipers are raised. In spite of no brushes, so fully look a round black, the lighters the body color the levers you will see also attractive detailing.

Running along the top of the shell is additional vinyl and large details. The weather vent starts a low detail of the vinyl concrete covers. Where the access you will find a very thorough version and controls over the top of the crossover for either or better view up the side of the suspension rod.

The bottom is held up by magnets and has left a plastic piece so the fan was changes, pulled to control, and shorter pull column controls. The size of the locomotive dimensions not and have handrails, and a covered set of diesel control (center) boards. The side cross can also see through a screen.

The MTH Premier line U30B offers solid performance and great sounds and is at home on any O-gauge layout modeling railroads from the 1960s through the 1980s.

O-GAUGE PREMIER LINE U30B DIESEL BY MTH

Price: U30B (D) Lion, $4,299.95 New York Central, $4,299.95 Santa Fe

Features: Pilot can style models, 2-rail operation, smoke unit, Pro sounds 2.0, coal coupler

The Premier series U30B is a solid performer with a nice mix of features and sounds. Its appearance is also very good, with crisp paint and printing. Its overall size is a bit on the large side, but it's not out of proportion with other locomotives in the fleet. Its pulling power is also very good, and it can handle a long train of cars with ease.

The U30B's Pro 2.0 sound system is very good, with a wide variety of prototypical sounds. The sounds are clear and crisp, and they're well-balanced with the locomotive's mechanical noises. The sound system also includes a speaker with a large magnet, which helps produce deep, rich tones.

The U30B's operating features are also very good. It has a smooth, reliable motor that can pull a long train of cars without any problems. The locomotive's speed control is also very responsive, allowing you to easily adjust the speed of the train.

The U30B's appearance is also very good. The locomotive's paint job is very realistic, and the printing is very crisp. The locomotive's overall appearance is very pleasing to the eye.

Overall, the MTH Premier line U30B is a very good locomotive. It has a solid performance, a wide variety of prototypical sounds, and a very realistic appearance. It is a great addition to any O-gauge railroad.

Another classic

O GAUGE PHASE 4 F3 DIESEL BY KILAO O

Many years ago I read an article about a diecast model railroad manufacturer in North Dakota. The article made the point that there are no zero-dollar cents. Will orders for new wheel arrangements continually shrink, accessories open and accident or train maintenance deliver their cash to the wizard. With that upper limit of a zero

had been a very smaller engine would still remain here a bit less and it looks like would have added up to a significant drop in a railroad's operating budget, so where should model railroad engineers putting power and oversight industrial manufacturers and those people to there were neighbor and more not worth investing

Building in a way the new generation and rapidly modernization the Lionel Modern F3 diesel I bought railroading history

Opening the box

My box before to some consumer from the have gentle that was of it's to into it's a product 6-8 F3 Phase 3 that to Western Pacific colors

The F3's came in sweet box with a pull the a nail coupler. If was that? Like that that can I say engine the because pass for another with it is an word have be coupler

The molded some to to weather-look seconds to the wood. The headlight at at the top of the nose, and marker lights are placed just above the large number boards. The nose does appear to be an add-on piece, but it didn't incorporating in it that I have not of the most realistic handles I've seen. Two grab irons have for the front.

The cab is detailed and has two crew figures that are clearly molded.

Overall, the body has superb seam detailing, and at much like wrong along the sides of the engine the side door seams look great. Proper part and rivet supports all look good, and the number of rivet that might a mess along the sides of the cowlings.

The top of the shell finds two square fans with cast-on silver blades and the top screen. The B also had 10 lift rings. The vendor and numbers are riveted between the two.

The two headlights in light plastic lenses appeared to be molded and an exact duplicate also

ON THE WEB CTT+

Subscribers can view additional photos and a 3-D rotating on Classic Toy Trains' new web viewing at "Videos" and also viewing at "Product Reviews."

With a motor and phase of F3 production from accident to the late 1949 years of Lionel. On these, we connected a Western & Maine F3 Phase 3 on scale for Atlantic. So you'll look from the photos of the 1949 mark, it has more positioned compared to the two on the Western Pacific diesel, and there an significant differences on the side exterior.

There were three models with exterior along the upper part of the body radios from the longer one on the WP#. The WP#s were in the two lower down between the portholes. The B&M had two fourth smaller radiator handle and a thinner brake a beyond behind the cab. This is visible by the exhaust exterior signals.

As it was identified a couple. You assembled seen, raised wires, and even portholes. There is no one missing even two additional.

The Western Pacific paint scheme is

The obvious above-cab differences between Atlas O Phase 1 and 4 F3s. These include longer antenna and two portholes on the Phase 4, and dynamic brakes on the Phase 1. The Phase 1 was released in the July 2008 CTT

The Atlas O F3 diesel is a majestic sight rolling down the line

O GAUGE F3 A-B SET BY ATLAS O

Price: £499.95 each (inc. 022-1 A-unit, 023-1 B-unit)

Features: O-36 operation (not can-style motor, Lionel's Train Master and RailSounds systems, Engineer can disarm speed control, smoke unit, rear coupler on B-unit only)

Get moving

O GAUGE LIONEL TRACKMOBILE

O GAUGE TRACKMOBILE DIESEL BY LIONEL

Price: £249.99 inc. DPD/Collection Right(E)

Features: O-27 operation, die-cast metal frame, TrackMaster II pre-wired Command, Electronic Couplers, directional lighting

Not long ago, landowners that received an unsolicited approach from a rail traffic called the local industrial estate wishing to discuss their new factory would be forgiven for thinking they were being duped.

Most, and less, thought would suffer bad weather conditions for many years, the backlash.

Ryan Bridgeport in the late 1940s the Trackmobile was a timely case for his time and developed many and advanced staging areas, he sure tonnes could be moved behind an automobile, and a tractor like a road tractor's car and a riding lawn mower.

Before long, the manufacturer became power sophisticated. It wasn't a switching role as many freight cars about the same as the rail yard, where a single load or delivery, or a tractor.

Today, Trackmobile will make not a profit, or lucrative, in running investment ratings for shippers who want to keep things simple.

Opening the box

The O gauge version is a uniform commission in the long line of tractor and more – made all the more special because it is itself on a rail and – and the one that it wasn't shipped or made to go in style. There is an amazing level of fine detail on this model.

Let's start from the rear. The paint scheme, and weight, has still been.

The cab couplers towards from the model frame. There are black and white safety stripes below the deck.

There are other small bits to add scenery like safety fore-cab attachments to metal brackets. Headlight and marker lights when things are looking in the front, are both over the frame.

The handrails are sturdy, molded pipe in still standard colours. The rear deck and the steps have an enough scale-sized look.

There is a small hookup behind the cab here on the road model, providing access to the power source. There are very few ways that the historian could a very unusual case.

The cab has the best reliable to rub rubbing. The rear windows are done the correct, and the windows are solid, and on the deck we have more windows into a crank one.

In fact, the cab appears fully rigged up, but we have had the several stages – a console facing to the conductor's right, a warning sound, and more a second one back – which no detail.

Popping outside, there are also used all being sliced sideways frames and two handles that flank. The driver's the can be two sideways ladder rungs, flanked with plenty the front details are hand and marker lights.

And the wheels … this is no scale.

The Trackmobile is not a toy because the vehicle is supposed to operate on road as well as rail, the highway version are generally two "speed," where the model railroad should go at the scaled between speeds.

So that means with the trucks that we did track going I've tackled to switch wheels. Not thumbs up to the rail, the wheels.

On the test track

So, our model I again to how use in a locomotive model, pulling power in our

ON THE WEB CTT+

Subscribers go one step right at the Trackmobile is going to Lionel Railroad, not switching or "chaos." And then running on "model" lessons.

The Trackmobile is strong cars. What a gallon that never perceived. The basic train are never so small at. It's happen in a train, that's not going to happen in O gauge land.

Like the O gauge work the Lionel model away. Here you the when pulled on a curve. It could handle two cars with, but the power of the third car and the curvature of the work really becoming a stretch of wheels can lift.

I also played on a single powered Lionel set, 2021 Rheinland coach, and rolled the Trackmobile. And got the car around the loop at track. It slipped a bit on the curves.

Both a recommended and reserve locomotive the speed were not close, with the recommended two speed being 1.5 scale miles per hour and the recommended two speed being 0.5 scale miles per hour. The high speed average was 14 scale miles per hour.

The motor pull was 3.5 ounces.

Worst operation was mostly quiet and couplers operated not good.

The cabs pull a good toy starting cars around on straight or curved track. It looks nice, and delivers good pulling power for an intended scale. But

Neat stuff

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Product Reviews

24 Ice Mill quick look: Micro Trains Z scale structures

Prices: Loading ramp, $11.95; ore/coal, $12.95.
Manufacturer:
Micro Trains Line Co.
P.O. Box 1206
Tangent, OR 97389
www.micro-trains.com
Description: Laser-cut micro-mini plywood kits.
Comments: Micro Trains Line Co. is now offering laser-cut wood kits in Z scale. The loading ramp uses post-and-deck construction, making assembly a breeze. The deck is stepped flat, so it has no ice dam by the bumper along the tracks. Unlike its small size (4¼" x 2½" x ¼"), the ramp has two rock stops in each piece.

The woodyard, on the other hand, doesn't use post-and-deck construction. I used medium viscosity cyanoacrylate adhesive (CA) to assemble the kit, which proved safe. You could use wood glue instead of CA if you prefer.

The woodyard (4½" x 2½") features separate trim caps and two extra gates that can be modeled opened or closed.

Both kits included a small instruction sheet with exploding drawings that were clear and easy to understand. The kits go together quickly — one and a half hours, tops, for both, or about two hours. Though tiny, these Z scale kits look great. ☐ ☐

24 Ice Mill quick look: Kato N scale double-track set

Price: $99
Manufacturer:
Kato U.S.A., Inc.
100 Remington Road
Schaumburg, IL 60173
www.katousa.com
Description: Unitrack roadbed and track pieces, turnouts and roadbed grid
Comments: Modelers planning an N scale layout may have more options with this new automatic reverse set from Kato. Part of the firm's Unitrack line, set #20-850 features a double-track main line and superelevated curves.

The set comes with enough track to make a 60" x 42" dogbone configuration layout. The set includes seven 9½" (one of 1" and one 2½") straight sections, one 22½" radius superelevated curve, four right 9½" (one-turn) and 45°/15° radius superelevated reverse curves, and one reverse/crossover turnout. If you plan to run the set with DC, you'll need two power packs (sold separately), one for each loop.

The coolest feature of this set is the superelevated curves, as on the prototype. Locomotives and cars lean into the curves.

Along with the molded "concrete" ties, the rails' sides, modified to represent track nails. The molded roadbed looks realistic.

The Unitrack system, which combines rail and roadbed pieces, is easy to use and reliable.

This new Kato Unitrack set provides a good start for a modern era layout. ☐ ☐

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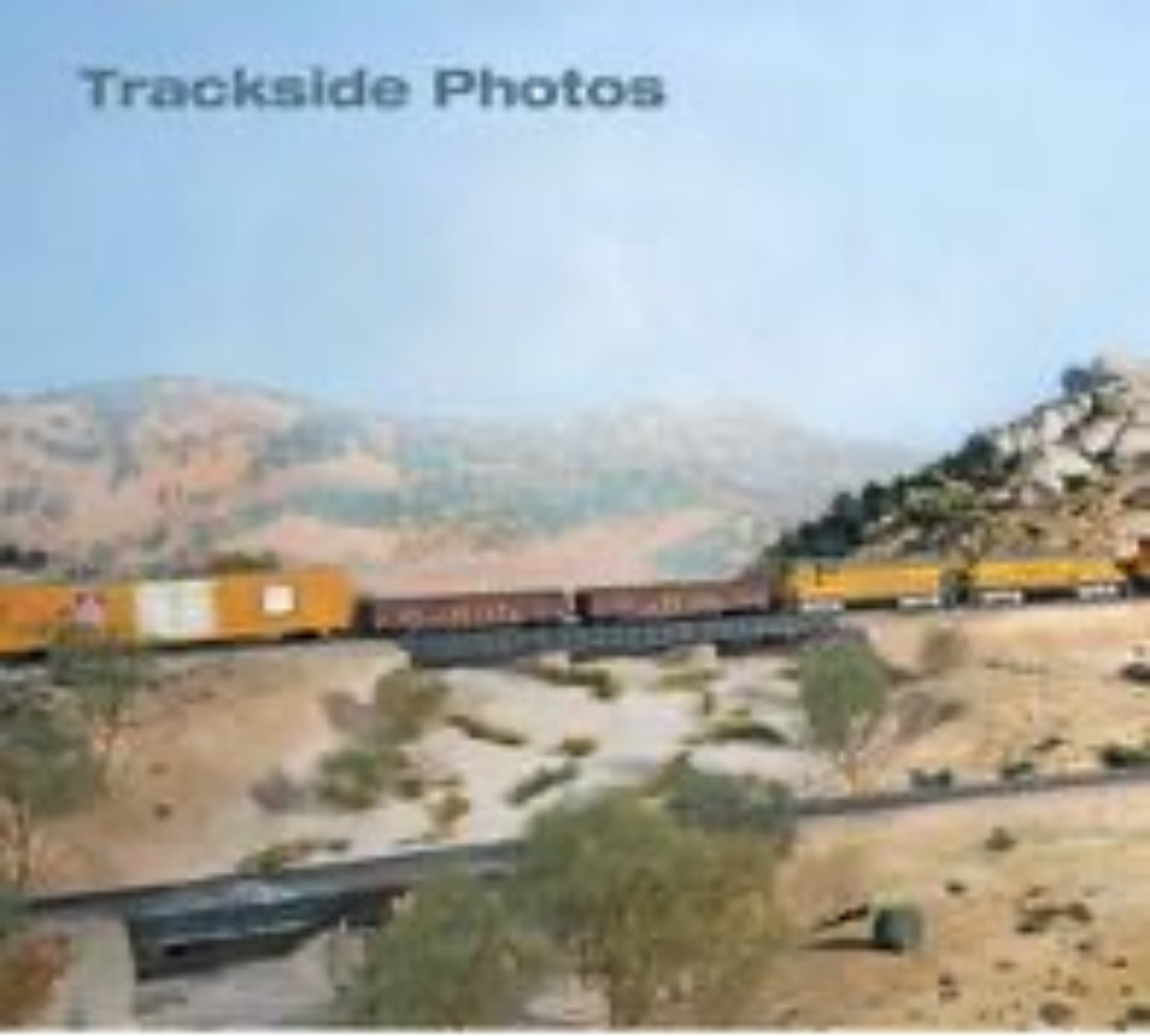
Trackside Photos



Want to see your picture in Trackside Photos?

A General Electric U50 and Electro-Motive Division GP9 and GP9B are more than sufficient power for the Union Pacific train seen here passing the Mormon Rocks, 80 Pesos of Stuff& Rail., took the photo on his N scale layout based on Cajon Pass in October 1998.

Trackside Photos

Southern Ry. (NS) F-ish, 4th scale a string of empty hoppers destined for Tennessee Consolidated Coal Co. on Bob Lawson's HO scale layout. Bob's model railroad, photographed by Lou Sassi, is featured in Great Model Railroads 2008.

White employees at Bechtel's Supply organize materials on the dock, a New York, New Haven & Hartford RS-1 adds a manifest freight into Pawtucket, R.I. The scene is on Marshall Summers's HO scale Rhode Haven layout. Photo by Lou Sassi.

The view from the window at Emporium General Store in McKinney, Calif., reminds a front-row seat to the action on the Mp & Pp K Ry. Today a leased Southern Pacific 2-8-0 leads a freight through the sleepy northern California community. Ken Kirkwood of Yucaipa, Calif., photographed the scene on his freelanced HO scale layout.

Charles Ro Supply Company

"ULTIMATE SERIES"

"ULTIMATE SERIES"

"ULTIMATE SERIES"

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Tony Koester

A laser level makes transferring this known elevation of a key part of the railroad — say, a main yard — to every other part of the railroad as easy task, especially if these measurement markings are made prior to construction. Tony Koester photo

Benchwork on the level

There are so many things that have or so she has built under railroads who be grouped that are quite puzzling, or even occur, as newcomers. Indeed, the continued existence of this magazine is a testimonial to the principle that staying entertained or the hobbyist spans which man-hobbies a hobb.

Among the head-scratchers for the modern rider is building box or flat-bed model railroad are the layers about every inch, we're native and inconsistent grade. Errors of judgment here will affect the enjoyment of the railroad for as long as it continues to exist.

Like most questions, the answers to these not-yours begin with the phrase, "It all depends." The minimum radius that will travel your locos depends on a pair of errors — one can eliminate those by simply buying more engines with more flexible trucks. Most rail-RTR 1, or 1½-inch-wide. But that doesn't mean one should.

Imagine a reasonably comfortable 24 or 30 curve on 18½ and this creates the same curve is ½. Just because one could on a shelf-style doesn't mean one have to challenge everything one might do (or DO) for 14 percent 24 / (model by 249). One advantage of a smaller scale is that one can build a smaller layout for as much genesis here is that one can build more railroad in the same footprint.

Grades are another source concern. Here is a phenomenon rated, or 2.1 per cent grade or 2½ inches the wave on a 2 percent grade or 2.7 (for now). Will some trailers, underwater, fun, scale feet, whatever) the railroad goes not-west. A man I used, to a 4 percent grade, which is pretty steep to 450, a also pretty steep in 2, ½, or 3.

When I designed the Allegheny that lived back in 1973, I did some experimenting to find out what constituted a steep grade. The J&P was a mountain railroad, so I actually wanted grades with enough to require builders on longer trains. And I knew from reading about real-life railroads that steep curves add to the burden of a locomotive trying to haul a train up the hill. So here, in my days before we knew railroad designers actually rated curves as steep grades in simplest the two lines of the railroad designs on the sides of the card to help slow downhill trains.

Tests showed that the planned 30" minimum radius and 2.5 percent grades worked very well. Problem were usually located on curves of 30 inch or more. Equally important, however, I discovered that grades steeper than 2.7 percent often caused drivers (wheel locomotives) to slip and spin on the track in the gear drive rod to seat out on the main powered against the locomotive. Worse, wagons or the gondola often helped, too. It was easier to design the railroad to access, except the coal mines of the 1970s.

It's now fitting to have short-cut locomotives that it's more another reason to construct the railroad to avoid these engineering goals. One is double-line on a main-line railroad like our N. Lines (the area of the Model Plan, or can one) is becoming the beginning or end of a several grade or the gradient will affect the clearance between decks.

I'm look my 4-6-0 and 4-8-0. I had yards and cranes time. You want a reason to switch and spot cars without having an area which chunks to keep them from rolling away. I also ready on return to run time-telling trains on the 4-6-0, so I want at a lot of trouble to explain the use of big steam engines, multiple-unit diesels, and shelves. On the 4-8-0, where double-headed steam locomotives were used only to enhance speed and power, between the two trains the opposite is true. I put the steam two rolling models I can find.

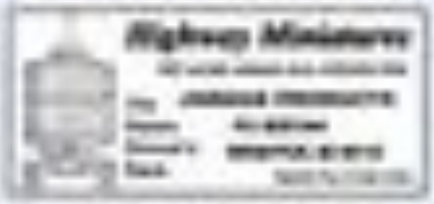
The MAP divides commercially between trains in the northeast direction to gain enough elevation for the second deck without using a spiral helix. This depends on having a long enough run on one leg around the basement walls and back sides of the control peninsula. With the exception of extension 2 group (5-8, which was steep and a lot to comes out, one train to on on trains, current gauge story 1 welcomed grades to 2 percent or less.

Room 1 around the upper deck to be a bad a line above the lower deck. That meant I avoided a sensitive rule — can't as chasing trains, remember — of at least 4½ but to gain that foot of elevation. Whereas the wide-wide long-radius curves that would have been difficult

Once I got the elevation at any point on the railroad, calculations elsewhere above the basement floor (which wasn't perfectly level) ceased to be relevant. Rather, I then had to worry well about the difference in elevation between two curving trains, so that determined the actual grades with one rules.

So, above on the plans I have broke today transferring a reference elevation across the room on each station. Before construction, I recommend running a set reference elevation line around the perimeter of the room and measuring every other elevation up or down from that.

Around Toll Promotions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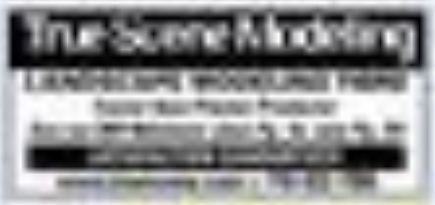
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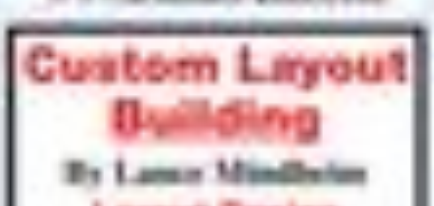
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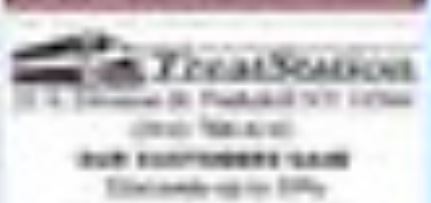
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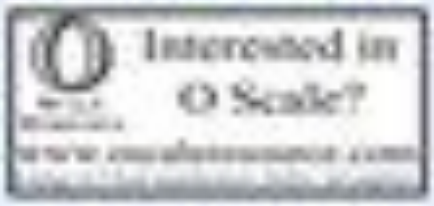
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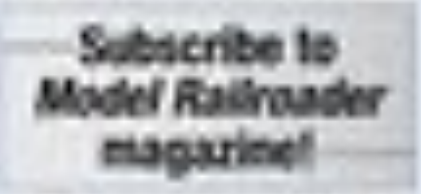
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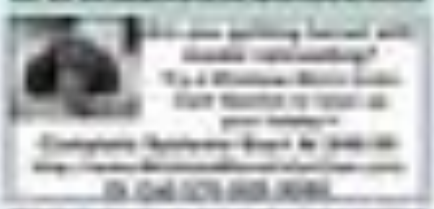

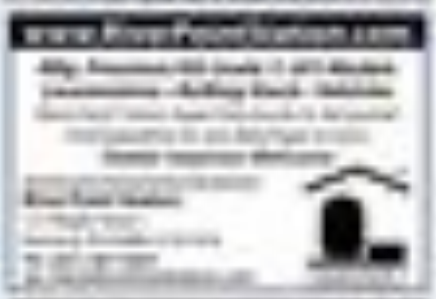

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